



# SCENE

## WebShare

SCENE WEBSHARE SERVER 5.4 - MANUAL  
JANUARY 2015

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## 1. Introduction

SCENE WebShare is a server software which allows to share 3D laser scan data over the internet, or, as SCENE WebShare 2GO, on an USB stick.

Scan data to be published with SCENE WebShare has to be prepared by the related features of SCENE before uploading.



Version 5.4 is the last version updated. For future applications, we recommend to switch to SCENE WebShare Cloud.

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SCENE WebShare enables you to put panoramic scan images on the Internet, thus enabling you to share scan information with other parties, like far-off company sites, customers, suppliers or partners without the need of additional software. All they need to view the scan data is a standard Internet browser with the Adobe Flash plug-in installed, like Windows Internet Explorer, or Mozilla Firefox.

Publishing scan data on the Web requires two key components:

- SCENE to create the WebShare data
- A Web server which hosts the WebShare data

FARO provides the SCENE WebShare Server application, enabling you to publish WebShare data on a local area network or on the Internet. The server application is independent of your SCENE installation and must be installed separately.

The SCENE WebShare Server package provides everything you need to easily install and configure your SCENE WebShare Server. It is based on Apache Tomcat (version 7) and will provide you with a stand-alone, easy to use solution for publishing scan data on the web. SCENE WebShare Server is available for 32-bit and 64-bit versions of Windows (please see chapter 2.1 for more information on this). You can find the WebShare server setup file on your SCENE DVD.

Since Apache Tomcat is a widely used server application it may be integrated in existing Web server configurations that might already exist in your company. Please refer to the Apache Tomcat manuals and setup guides, or visit the Apache Tomcat homepage (<http://tomcat.apache.org/>) for detailed information on how to integrate Tomcat with your existing IT infrastructure.

The purpose of this manual is to enable customers to set up their own SCENE WebShare Server and to integrate WebShare data into their server application to make it available through the Internet. However, the way of setting up the server described in this manual is one of many possible ways to run a Web server, or to run a Tomcat server. Please feel free to setup your own service based on any server of your choice. Please understand that we have to limit customer support to installations based on our own setup. For details about creating and viewing the WebShare data, please read the SCENE User Manual.

## 2. Setting Up a SCENE WebShare Server

This chapter provides a short description on how to install and set up the SCENE WebShare Server. You may also have a look into chapter 2.3 which provides a detailed step-by-step guide for the WebShare server installation and configuration. This step-by-step guide shows each step of the server installation and configuration in detail on the basis of a concrete example and is illustrated with screenshots to make things as comprehensible as possible.

### 2.1. System Requirements

#### 2.1.1. Minimum System Requirements

The minimum system requirements to set up a SCENE WebShare Server are:

- CPU: Intel Pentium 4 or AMD Athlon
- RAM: 2GB
- Operating System: Windows 7 or Windows Server 2008 R2



Please note that measurement features on such systems will be restricted to a very low number of users, depending on the scan data. This is due to memory constraints and constraints of 32-bit operating systems. Only use this type of setup if you do not need measurement or documentation features.

#### 2.1.2. Recommended System Requirements

The recommended system requirements are:

- CPU: 64-bit multi-core CPU, e.g. Intel Core i5, AMD Phenom II or an adequate server CPU.
- RAM: 8GB or more.
- Operating System:
  - Windows 7 (64-bit version) or Windows Server 2008 R2
  - Windows 8, 8.1 (both 64-bit version) or Windows Server 2012

For multi-user systems, the most critical system requirement is physical RAM. We recommend using at least 8GB of physical RAM and a 64-bit operating system to facilitate measurement and documentation features for multiple simultaneous users.

## 2.2. Installing a SCENE WebShare Server

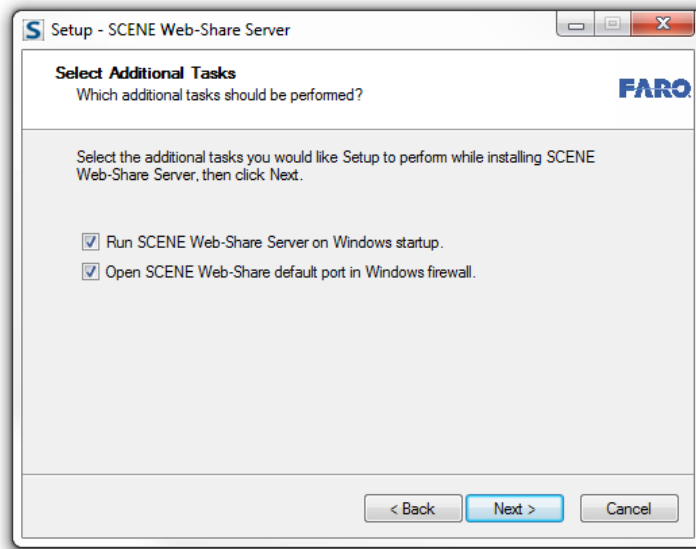
If you want to update an already existing SCENE WebShare Server to a newer version, please see chapter 2.13 first.

The SCENE WebShare Server installer will transfer all necessary programs and data to your computer and configures the server for direct use.

The installer configures the SCENE WebShare Server to run as a system service. It can either be started automatically on every Windows startup, or

manually. During the setup, you will be asked which startup type you would like to have.

The SCENE WebShare installer can add a port opening rule to the Windows firewall for the SCENE WebShare default connection port (TCP 8400). Remember to adjust your network hardware accordingly if necessary. If you change the connection port of your SCENE WebShare Server you will need to adjust all firewall rules accordingly.

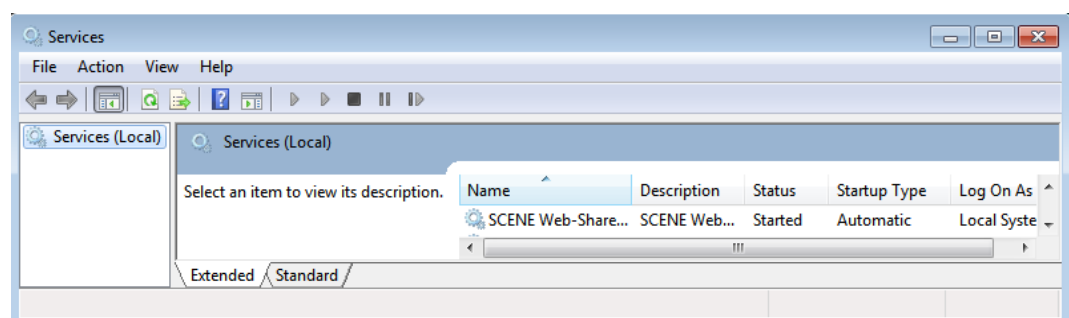


**Figure 1: Setup Dialog**

You can change the startup method any time by editing the SCENE WebShare service properties: Use the Windows administrative tool *Services*

- in Windows 8: **Charms > Control Panel > Settings > System and Security > Administrative Tools > Services**,
- in Windows 7: **Control Panel > System and Security > Administrative Tools > Services**,

to start and stop the SCENE WebShare Server and to change the startup method.



**Figure 2: Windows Services**

You have to restart your computer after the installation of the SCENE WebShare Server.

## 2.3. Step-by-Step Setup Guide

This chapter will guide you through the SCENE WebShare Server installation and configuration step by step. Each step is illustrated with screenshots to make things as comprehensible as possible.

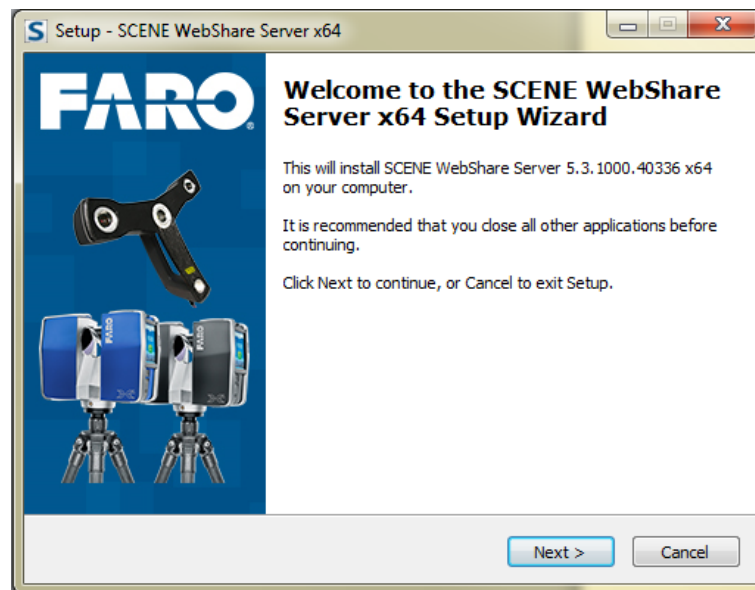
This chapter covers the installation of the SCENE WebShare Server. Chapter 2.4 covers the configuration and customization of the SCENE WebShare Server.

This part of this document will guide you through the installation process. It is pretty straight forward. Choices you can make during the installation process are explained. In case you already have the SCENE WebShare Server installed, you can skip this part and go straight to chapter 2.4: *Configuration*.



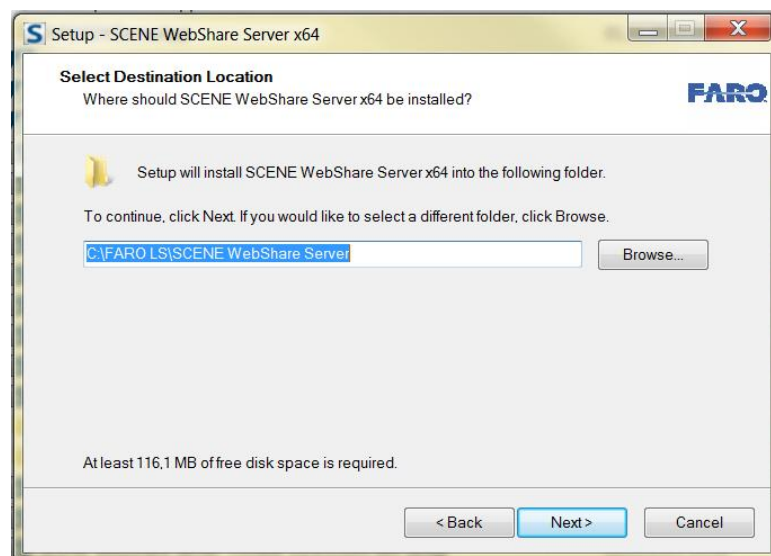
Please note that the SCENE WebShare Server installation needs at least Power User privileges to succeed.

1. Double click the SCENE WebShare Server executable to start the installation wizard.



**Figure 3: Setup start screen**

2. Accept the license agreement.

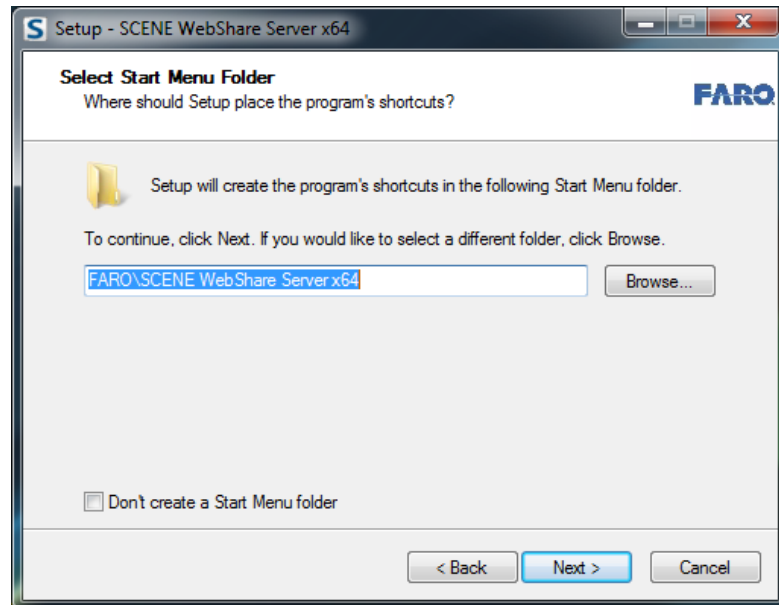


**Figure 4: Select destination location**

3. Select a destination for the SCENE WebShare Server and click **Next** to proceed.

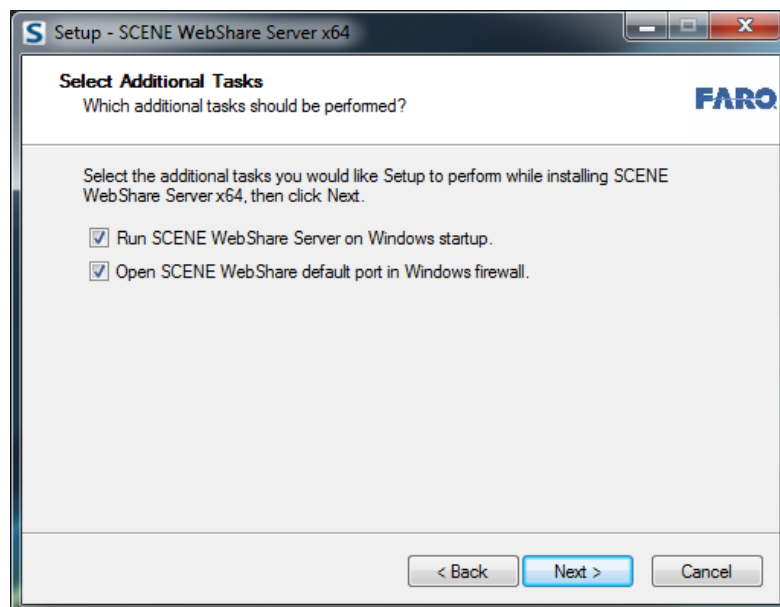


The installation will require about 100 MB of free disc space at the selected location.



**Figure 5: Select start menu folder**

4. The SCENE WebShare Server setup will create start menu entries by default. If you do not wish to create these entries, select the **Don't create a Start Menu folder** checkbox.
5. Customize the start menu folder name and location.

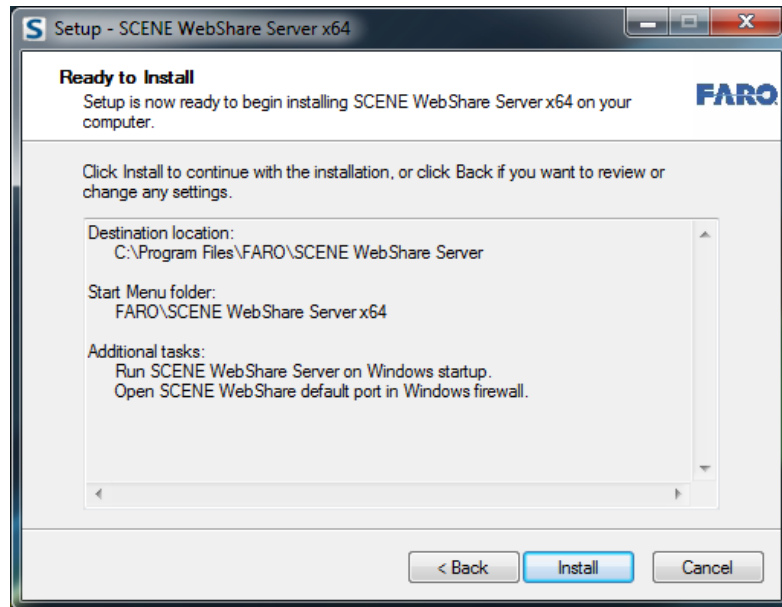


**Figure 6: Select additional tasks**

6. By default, SCENE WebShare Server will run as a Windows System Service, which means that it will be automatically started on the startup of Windows.
  - o If you do not wish to run the server automatically, clear the **Run SCENE WebShare Server on Windows startup** checkbox.

- By default, the setup will add rules to the firewall of Windows to make SCENE WebShare Server accessible from other machines on your local area network. Clear this checkbox if you do not wish to make changes to the Windows firewall or if you intend to run the WebShare server on a non-default port. The default port is 8400.
- Click **Next** to proceed.

The SCENE WebShare Server Setup has now gathered all necessary data.

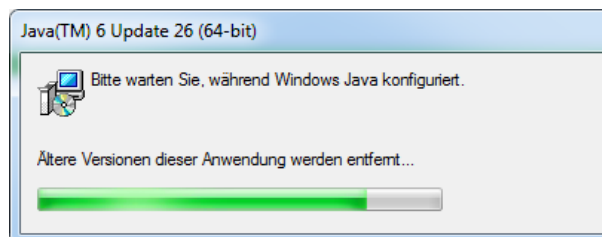


**Figure 7: Install the server**

7. Click **Install** to proceed with the installation process.

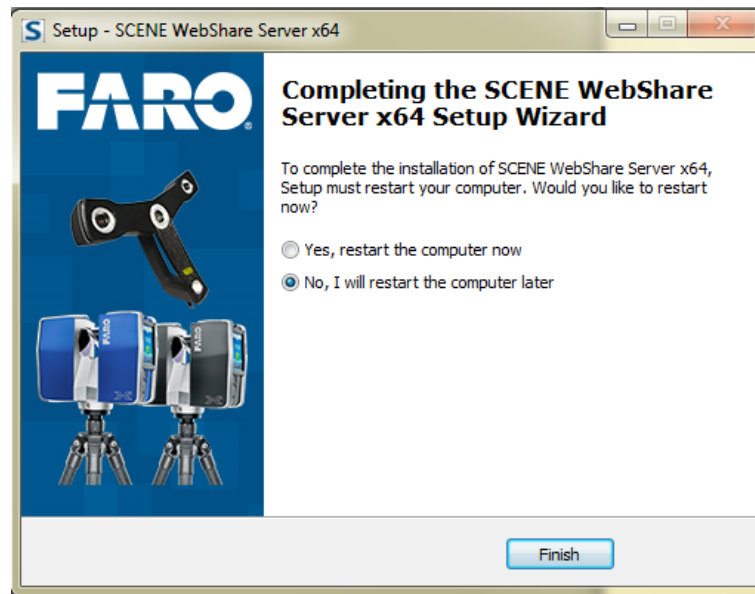
Setup will now copy the program files.

Setup will check for necessary 3rd party software updates automatically and install them if necessary. This includes JAVA and the Microsoft Visual Studio Redistributable Package.



**Figure 8: Install 3rd party software**

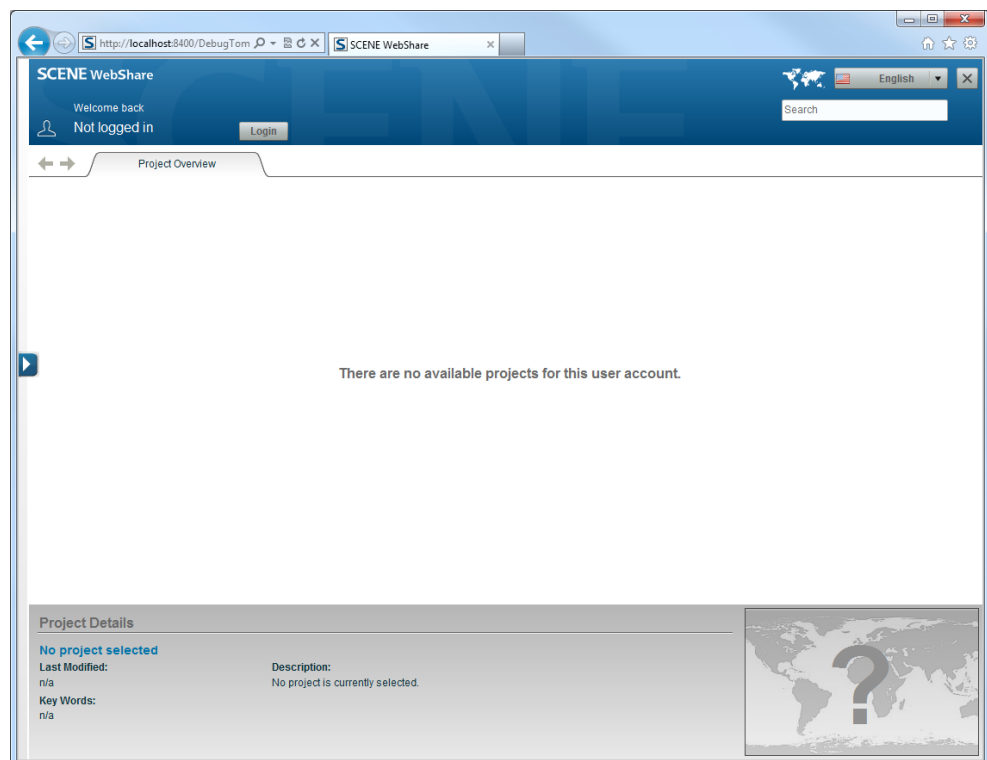
8. **Reboot your machine** after the installation is finished. Rebooting is necessary to configure and start the SCENE WebShare Windows Service and to assure the Firewall rules will be applied correctly.



**Figure 9: Restart**

**Please reboot the machine now.**

9. After rebooting the machine, open up a browser and open *http://localhost:8400*. If you chose to run SCENE WebShare on Windows startup (default), you should see the following:



**Figure 10: Webshare start screen**

If this screen shows up, your SCENE WebShare Server is up and running. You can proceed to part two of this document if you wish to customize your SCENE WebShare Server.

If you disabled the automatic startup, please refer to chapter 2.4.4 for instruction on how to startup the WebShare server.

### 2.3.1. Installing SCENE WebShare Server on a Remote Server

Installation on a remote server works as described above. Almost all service providers allow access to Windows servers via Windows Remote Desktop, VNC or similar tools. This way you can work on your Windows Server just like on your desktop machine. Ask your server provider how to access your Windows Server via remote desktop.

## 2.4. Configuration

This chapter will cover all common configuration tasks for the SCENE WebShare Server. Please make sure the server was installed correctly and is up and running. Enter <http://localhost:8400> into your browser's address bar to check if the server was installed correctly and the WebShare start screen appears.

### 2.4.1. Connector Port Configuration

The default connection port for the SCENE WebShare Server is `8400`. This guide will show you how to change this port to the default http port `80`. The port can be changed to any valid connection port. Please make sure that the desired port is not taken by any other services already.

#### Check for port availability

1. To get a list of all currently used ports, open up a command line window (`cmd.exe`):

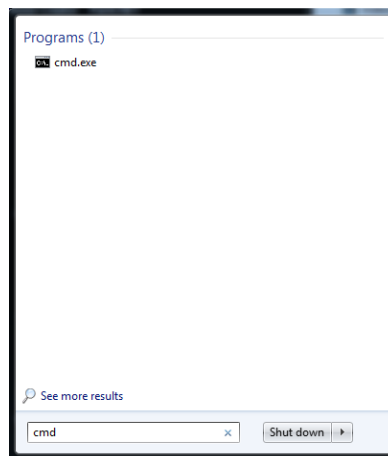
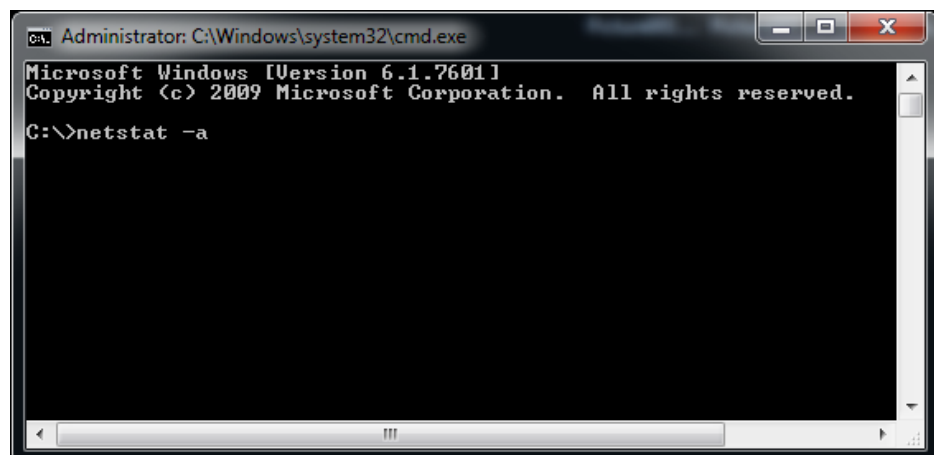


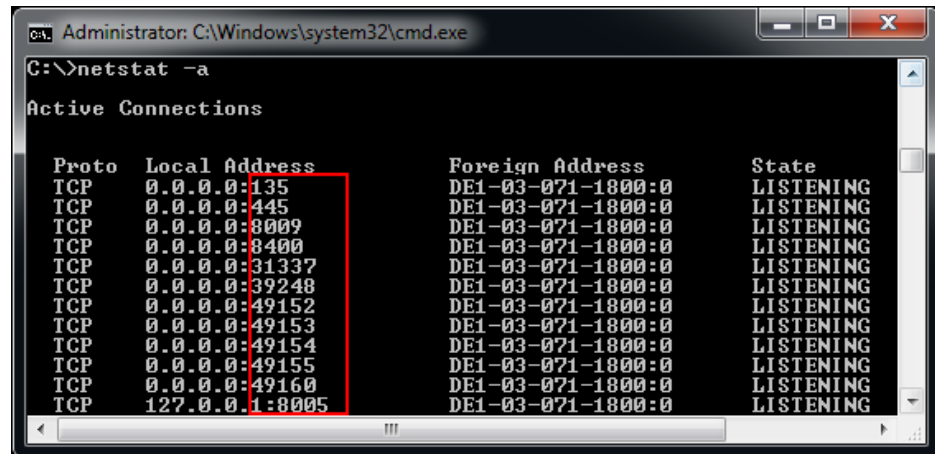
Figure 11: Open cmd.exe

This will bring up the Windows console:



**Figure 12: Windows console**

2. Type in `netstat -a`
3. Press enter to get a list of all currently active network connections. The important part here is the *Local Address* column. Make sure the desired port is not already listed in any of the entries of this column. The ports are the digits behind the colon, for example `8400` is listed in the example below as port for our running SCENE WebShare Server.

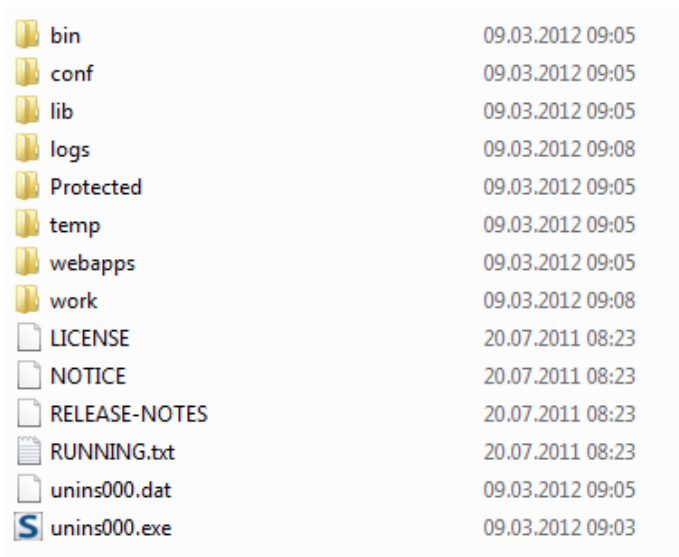
**Figure 13: Active connections**

As you can see, port `80` (the port we want to use for our WebShare server in this example) is not listed here, so we can proceed changing the WebShare Server connection to this port. If your desired port is listed here, you either need to identify the process that is using this port, or choose a different port for the WebShare server. In case of port `80`, if this one is already taken it is very likely to be used by a Webserver running on your machine like Apache or IIS.

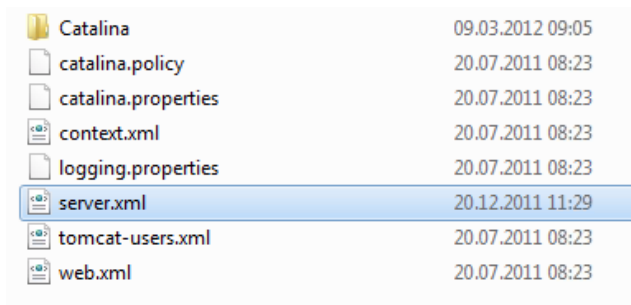
### Changing the Connection Port

Next, we are going to modify some WebShare configuration files:

4. First, open up the installation folder of the WebShare server. This folder contains several files and folders. The one we are interested in right now is the `conf` folder.

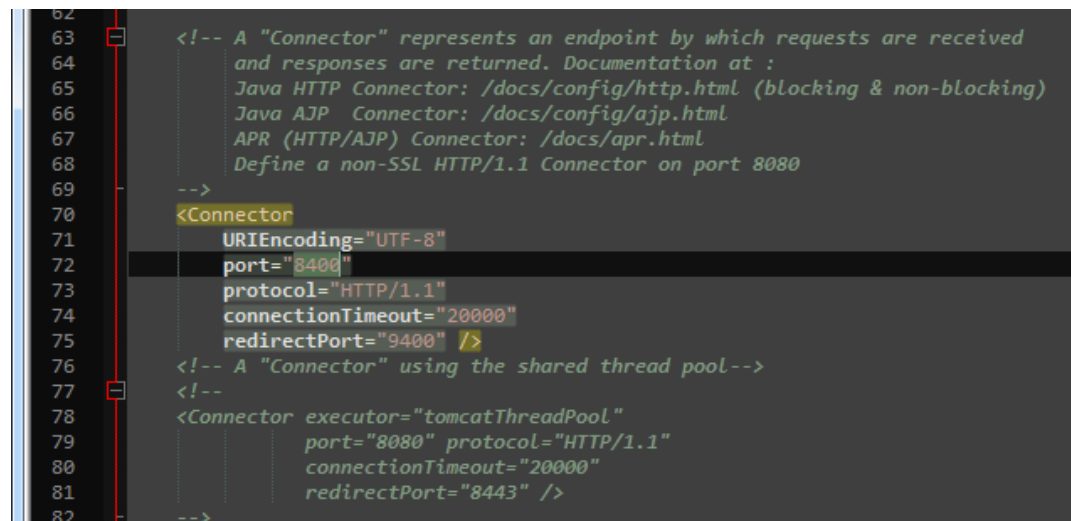
**Figure 14: Installation folder**

5. In the `conf` folder, open the `server.xml` in your favorite text editor.



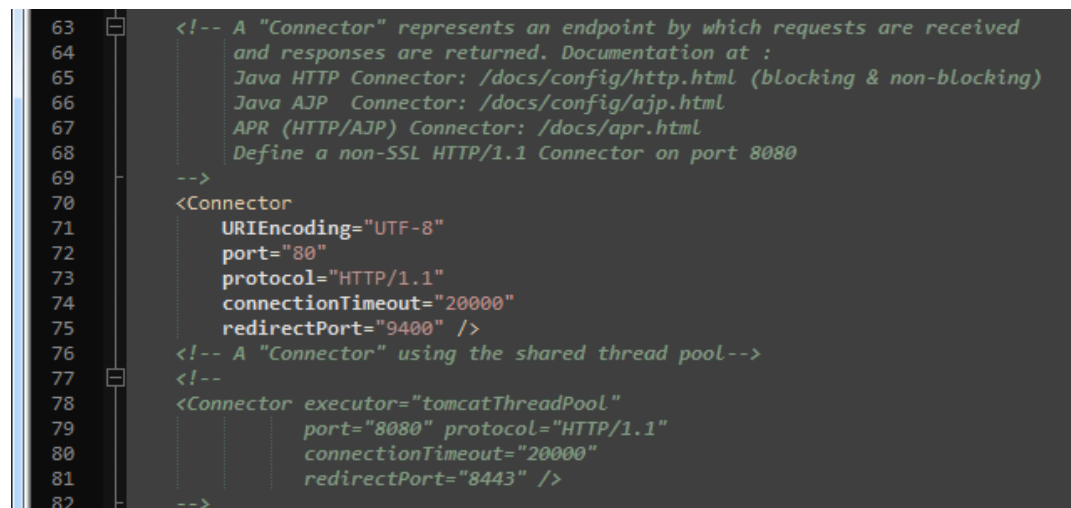
**Figure 15: conf folder**

6. Scroll down to line 72 or search for `port=8400`



**Figure 16: server.xml**

7. Change the `8400` to the desired port number. In this example we will change it to `80`:



**Figure 17: server.xml**

8. Save the file and close the editor.
9. Switch back to the Windows Explorer and Open up the `Webapps` folder from the WebShare server Install folder:

**Adapt  
Automated  
Redirecting**

bin	09.03.2012 09:05
conf	09.03.2012 09:05
lib	09.03.2012 09:05
logs	09.03.2012 09:08
Protected	09.03.2012 09:05
temp	09.03.2012 09:05
webapps	09.03.2012 09:05
work	09.03.2012 09:08
LICENSE	20.07.2011 08:23
NOTICE	20.07.2011 08:23
RELEASE-NOTES	20.07.2011 08:23
RUNNING.txt	20.07.2011 08:23
unins000.dat	09.03.2012 09:05
unins000.exe	09.03.2012 09:03

**Figure 18: Installation folder**

10. Open the `ROOT` folder inside `webapps`:

blazeds	09.03.2012 09:05
DebugTomcat	09.03.2012 09:05
host-manager	09.03.2012 09:05
manager	09.03.2012 09:05
ROOT	09.03.2012 09:05

**Figure 19: webapps folder**

11. Inside the `ROOT` directory, open up the `index.html` file in your favorite text editor.

WEB-INF	09.03.2012 09:05
favicon.ico	20.07.2011 08:23
index.html	11.01.2012 13:36

**Figure 20: ROOT folder**

There are 5 occurrences of the default port (`8400`) in this file. All of them need to be replaced with the new port number (port `80` for this tutorial)

```

1  <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
2  <html>
3  <head>
4    <title>SCENE WebShare</title>
5    <meta name="title" content="SCENE WebShare"/>
6    <meta name="description" content="SCENE WebShare Server powered by FARO"/>
7    <meta name="keywords" content="FARO, SCENE, WebShare, Laserscanner, Photon, Focus 3D"/>
8    <link rel="image_src" href="http://localhost:8400/faro.png"/>
9
10   <link rel="shortcut icon" href="http://localhost:8400/favicon.ico" type="image/vnd.microsoft.icon">
11   <link rel="icon" href="http://localhost:8400/favicon.ico" type="image/vnd.microsoft.icon">
12
13   <SCRIPT type="text/javascript">
14     <!--
15     HTTP_GET_VARS=new Array();
16     strGET=document.location.search.substr(1,document.location.search.length);
17     if(strGET!='')
18     {
19       gArr=strGET.split('&');
20       for(i=0;i<gArr.length;i++)
21       {
22         vArr=gArr[i].split('=');
23         if(vArr.length>1){v=vArr[1]};
24         HTTP_GET_VARS[unescape(vArr[0])]=unescape(v);
25       }
26     }
27
28     function GET(v)
29     {
30       if(!HTTP_GET_VARS[v]){return ''};
31       return HTTP_GET_VARS[v];
32     }
33
34     document.writeln ('Opening Project:' + GET('autoLoad'));
35     document.writeln ('Opening Scan:' + GET('scanID'));
36     window.location = ('http://localhost:8400/DebugTomcat/WebScene/WebScene.html?autoLoad='+GET('autoLoad')+'&scanID='+GET('sc
37     // -->
38   </SCRIPT>
39   <font color="#A8A8A8"><strong><font size="1" face="Arial, Helvetica, sans-serif">
40     If you are not redirected within 5 seconds please click <a href = "http://localhost:8400/DebugTomcat/WebScene/WebScene.htm
41   </font></strong><font size="1" face="Arial, Helvetica, sans-serif"></font></font>
42 </body>
43 </html>
44

```

Figure 21: index.html

- Change 8400 to 80 (or your custom port number) at all five locations, save the file and close the editor.



The same file needs to be edited again if you want to make the WebShare server accessible from other machines on a local network or via the internet. In this case change all occurrences of localhost to the IP-Address of your machine.

### (Re)Starting the Server

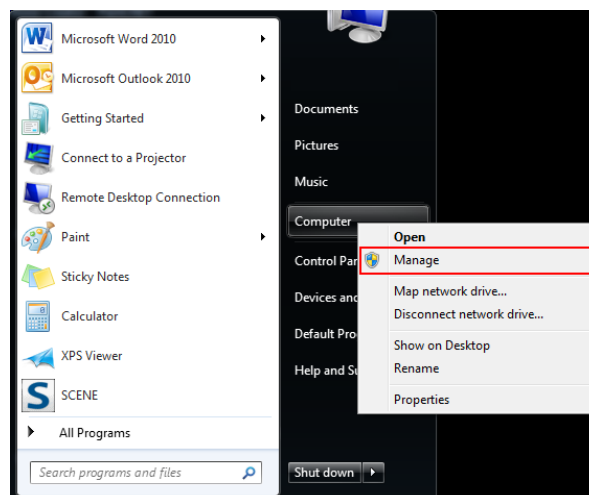
If you disabled the automatic startup, you will have to start the WebShare server as soon as you need it.



You have to restart WebShare server every time you modified something with its access data, e.g. the ports.

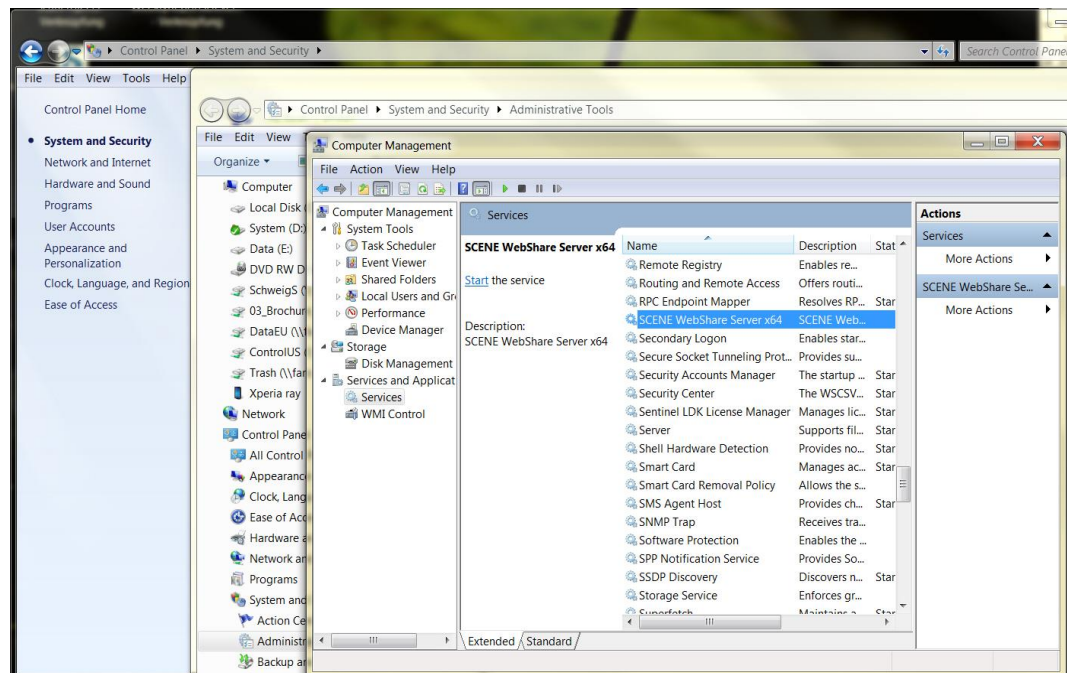
### Windows 7

- Open up the computer management console by opening the start menu, right click on Computer and choose **Manage**:



**Figure 22: Choose Manage**

2. Inside the management console, on the left hand side navigate to **Services** and find the service starting with **SCENE WebShareServer**:

**Figure 23: Computer Management**

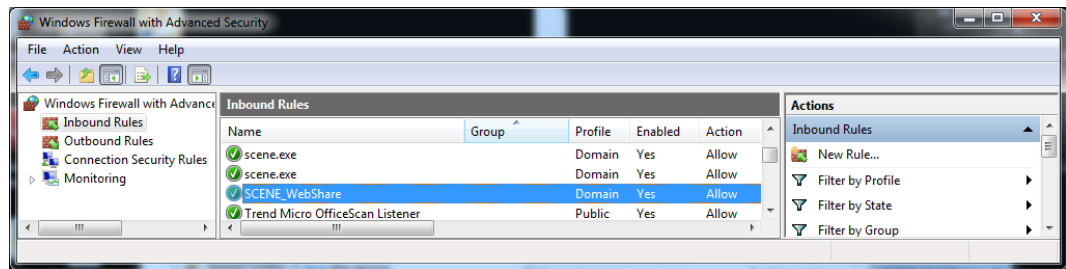
3. Start the service, or, in case of a restart: Stop the service, wait for 5 seconds and then start the service again.
4. To verify the port change has worked, open up <http://localhost:80> in your favorite web browser. If the WebShare start screen shows up, your port change was successful. If you get an error screen, you might have missed one of the steps above. Please make sure to follow these steps exactly!

**Verify  
Connection  
on new Port**

### 2.4.2. Making SCENE WebShare Available on Networks

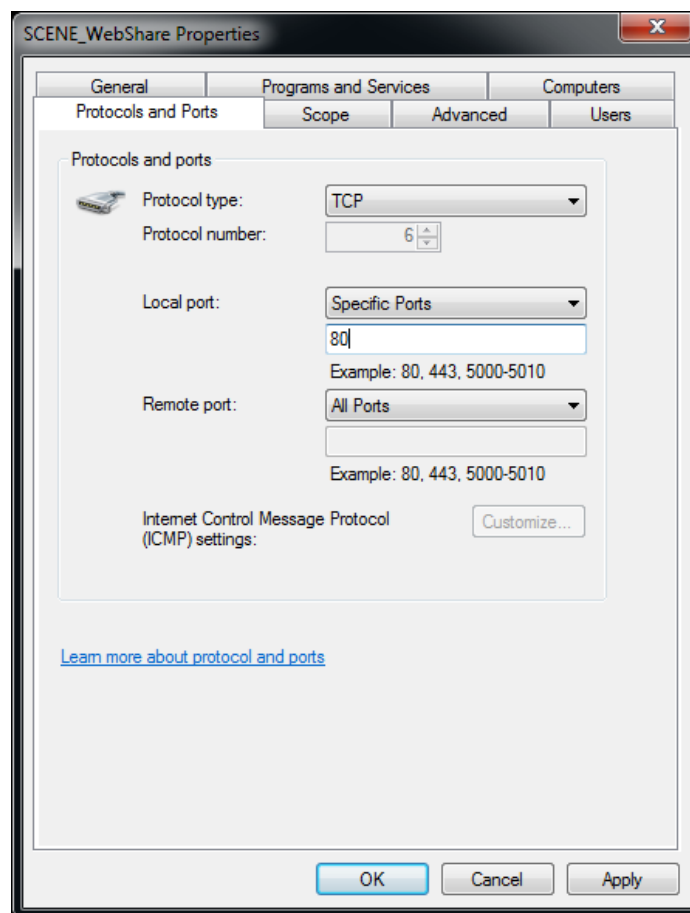
This chapter will show you how to make your SCENE WebShare Server available on networks. This includes local area networks and Internet connections. However, configuring your local IT infrastructure to make the SCENE WebShare Server machine visible from the Internet is beyond the scope of this document. It is assumed that your machine is visible in the target network and that it can be accessed by IP-Address. If your machine sits behind any kind of firewall make sure to allow incoming connections on the WebShare server port!

The Windows Firewall configuration will be used as an example here. If your Windows Firewall is enabled, and you are running WebShare on a non-default port (other than 8400) you have to adapt/create the Windows Firewall rule to allow incoming connections on the WebShare port. Open up the Windows Firewall advanced configuration window and open up the **Inbound Rules**.



**Figure 24: Windows Firewall**

1. Locate the **SCENE\_WebShare** rule (if you unchecked the firewall setting in the SCENE WebShare Installer, you need to add a new rule now).
2. Double click on the rule to bring up the rule configuration dialog.
3. Switch to the Protocols and Ports tab:



**Figure 25: Properties of SCENE WebShare rule**

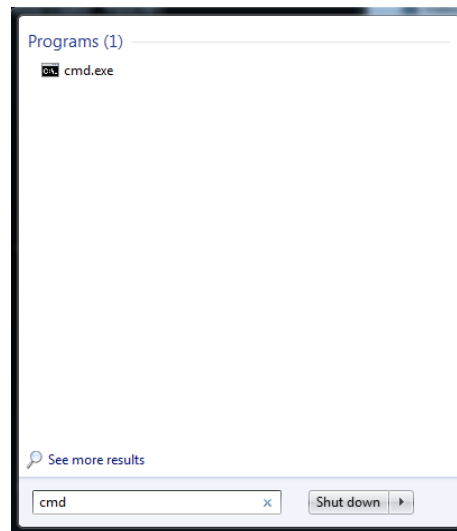
Make sure the local port matches your WebShare server port setting and the protocol type is set to TCP. Remote port should be set to **All Ports**. If these settings are correct, you may close the Window Firewall configuration.

### WebShare Server Configuration

If you do not know the IP Address of your machine in the local network, you need to find out what this address is first. If you already know the IP address of your server machine, you can skip this step.

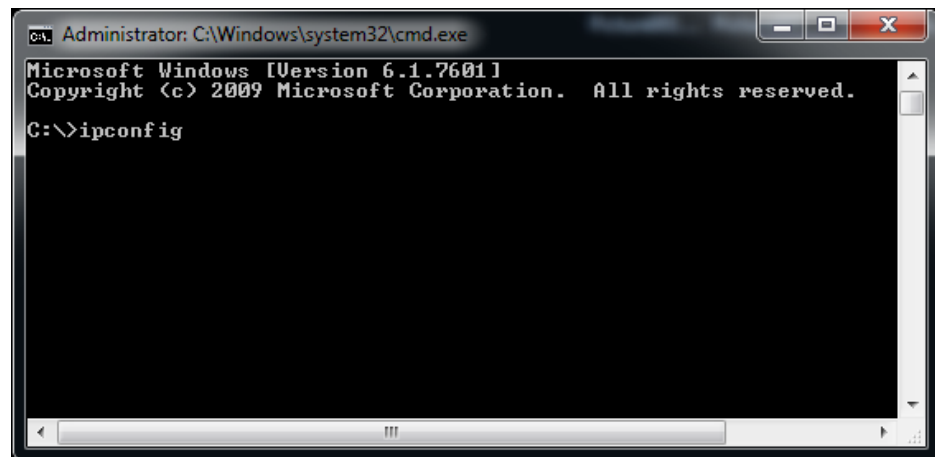
#### What's my IP address?

4. Open up a command line window (`cmd.exe`):



**Figure 26: Open cmd.exe**

This will bring up a windows console like this:



**Figure 27: Windows console**

Type *ipconfig* and press return. You will get a list of all network interfaces of your machine and their assigned IP addresses. Your machine may have multiple network adapters. Commonly, only one of them is used at a time and this should be the only one that has an IP address assigned at this point.

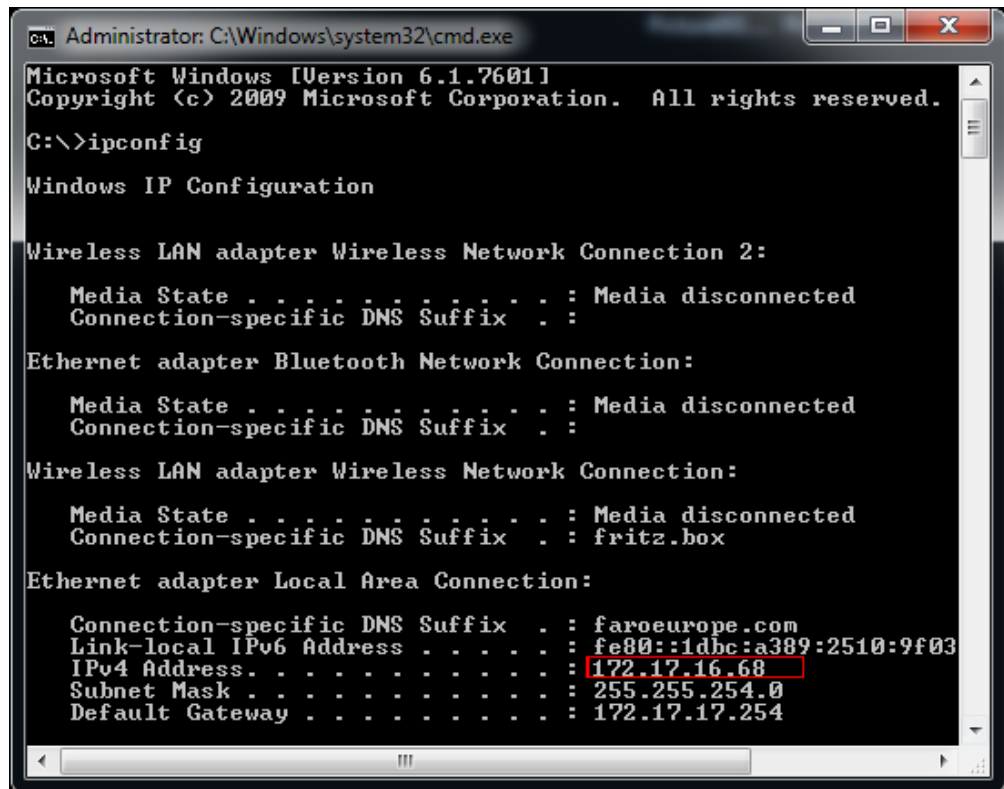


Figure 28: Network interfaces

In this example, the IP address we are looking for is the `172.17.16.68` as shown in the screenshot above. If several different IP addresses are shown, ask your network administrator which one to use.

### Updating the server configuration

Next, we are going to configure the WebShare server to accept remote requests.

5. Open up the Windows Explorer and open up the `webapps` folder from the WebShare server Install folder:

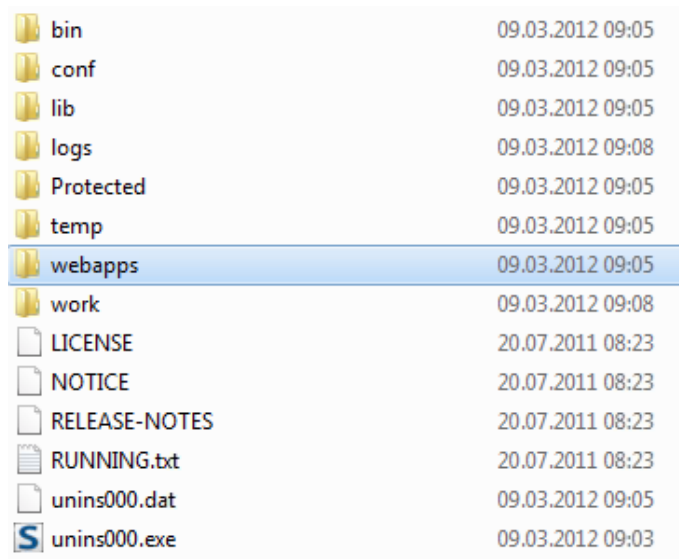


Figure 29: Installation folder

Open the `ROOT` folder inside `webapps`:

blazeds	09.03.2012 09:05
DebugTomcat	09.03.2012 09:05
host-manager	09.03.2012 09:05
manager	09.03.2012 09:05
ROOT	09.03.2012 09:05

Figure 30: webapps folder

Inside the `ROOT` folder, open up the `index.html` file in your favorite text editor:

WEB-INF	09.03.2012 09:05
favicon.ico	20.07.2011 08:23
index.html	11.01.2012 13:36

Figure 31: ROOT folder

If this file looks familiar to you, you have probably already changed the connection port. This is one of the files that was needed to change the connection port.

There are five occurrences of `localhost` in this file. All of them need to be replaced by the IP Address of your machine in the target network or, in case this machine is accessible via internet and you have a domain name already pointing to this IP address, you can use the domain name instead. For this tutorial we are going to use a local network IP address.

```

1  <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
2  <html>
3  <head>
4  <title>SCENE WebShare</title>
5  <meta name="title" content="SCENE WebShare"/>
6  <meta name="description" content="SCENE WebShare Server powered by FARO"/>
7  <meta name="keywords" content="FARO, SCENE, WebShare, Laserscanner, Photon, Focus 3D"/>
8  <link rel="image_src" href="http://localhost:80/faro.png"/>
9
10 <link rel="shortcut icon" href="http://localhost:80/favicon.ico" type="image/vnd.microsoft.icon"
11 <link rel="icon" href="http://localhost:30/favicon.ico" type="image/vnd.microsoft.icon">
12
13 <SCRIPT type="text/javascript">
14 <!--
15 HTTP_GET_VARS=new Array();
16 strGET=document.location.search.substr(1,document.location.search.length);
17 if(strGET!='')
18 {
19     gArr=strGET.split('&');
20     for(i=0;i<gArr.length;i++)
21     {
22         v='';vArr=gArr[i].split('=');
23         if(vArr.length>1){v=vArr[1];}
24         HTTP_GET_VARS[unescape(vArr[0])]=unescape(v);
25     }
26 }
27
28 function GET(v)
29 {
30     if(!HTTP_GET_VARS[v]){return '';}
31     return HTTP_GET_VARS[v];
32 }
33
34 document.writeln ('Opening Project:' + GET('autoLoad'));
35 document.writeln ('Opening Scan:' + GET('scanID'));
36 window.location = ('http://localhost:30/DebugTomcat/WebScene/WebScene.html?autoLoad='+GET('autol
37 // -->
38 </SCRIPT>
39 <font color="#A8A8A8"><strong><font size="1" face="Arial, Helvetica, sans-serif">
40 If you are not redirected within 5 seconds please click <a href = "http://localhost:80/DebugTom
41 </font></strong><font size="1" face="Arial, Helvetica, sans-serif"></font></font>
42 </body>
43 </html>

```

Figure 32: index.html

Replace all five occurrences of `localhost` with the IP address of your machine. In this case the IP address is 172.17.16.68. Save the file and close the editor. If you do not know the IP address of your machine, please refer to chapter 2.4.2: *What's my IP address?*. If you are running WebShare on rented machine, your service provider will provide you with all necessary information.

Restart your SCENE WebShare Server as described in chapter 2.4.1: (Re)Starting the Server.

### Verify Remote Connection

Try to connect to <http://172.17.16.68:8400> from a remote machine (this is only an example. You need to replace the IP address with the real IP address of your machine). In case you are not using the default port (8400) please change the port to your WebShare port respectively.

The SCENE WebShare start screen should show up on the remote machine.

### Using a Domain Name instead of an IP Address

If you have a domain name you want to use for your WebShare server, follow the instructions above but use the full domain name (e.g. <http://www.farowebshare.com>) instead of the IP Address of your server when editing the index.html file.

Domain names can be obtained separately and domain name / IP Address configuration strongly depends on the service provider. Please ask your service provider or network administrator how to make your server IP address available via domain name.

## 2.4.3. Using Projects from External Sources (Windows 7 Only)

Using a default installation of WebShare server, all of your projects will either be located in the `Protected\Projects` or `Protected\PublicProjects` or `Protected\Projects` or `Protected\Projects` folders.

However, it is possible to include projects from other folders as well. To do this you need to create a so called symbolic link. Unlike folder shortcuts, symbolic links are treated like normal folders by the Windows operating system.

### Creating Symbolic Links

To create symbolic links open up an administrator command line window (`cmd.exe`) with administrator privileges. For this, right click on the `cmd.exe` and choose **Run as Administrator**:

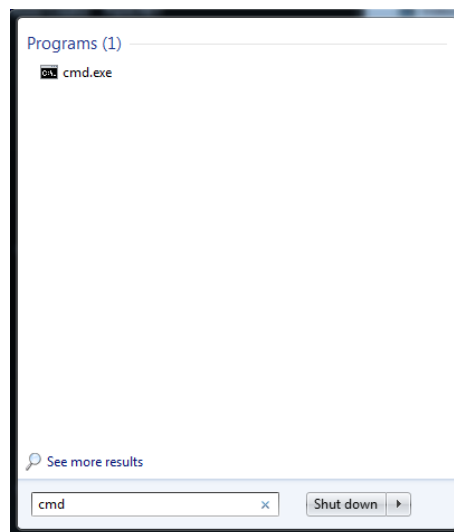


Figure 33: Open cmd.exe

This will bring up the Windows console.

For example, if you want to put all public projects on drive D in folder MyScanProjects, you would first delete the original folder `C:\Program Files\FARO\SCENE WebShare Server\Protected\PublicProjects\` and then create the link for it:

```
mklink /d C:\Program Files\FARO\SCENE WebShareServer\Protected\PublicProjects D:\MyScanProjects
```

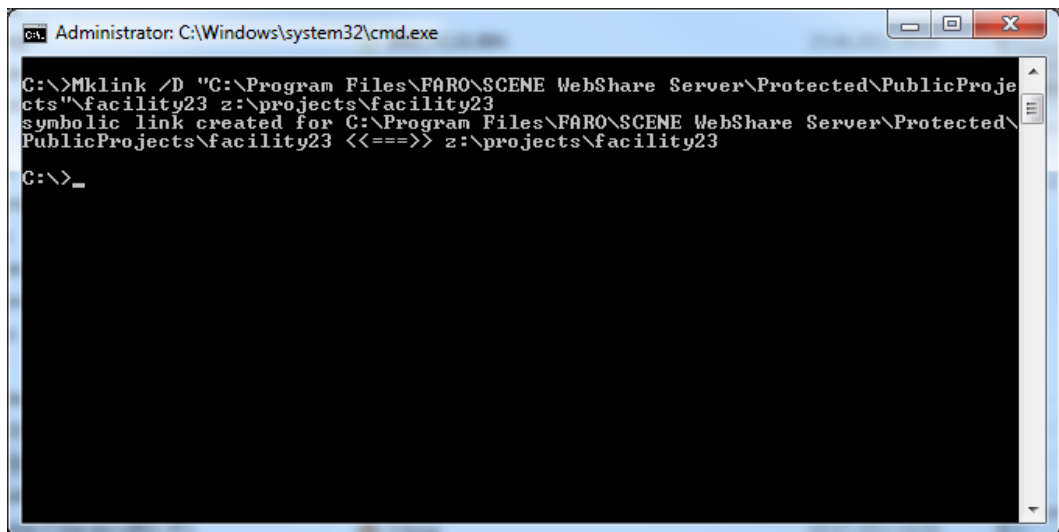
Example:

You want to integrate a WebShare Project *Facility23* from a separate local hard drive `Z:\Projects\` on your system into your existing public projects.

Assuming your WebShare server is installed in `C:\Program Files\FARO\SCENE WebShare Server` then WebShare will use `C:\Program Files\FARO\SCENE WebShare Server\Protected\PublicProjects` for your public projects by default.

To integrate the project from the local resource, type in the following command into your administrator console:

```
mklink /d C:\Program Files\FARO\SCENE WebShare Server\Protected\PublicProjects\facility23 z:\projects\facility23
```

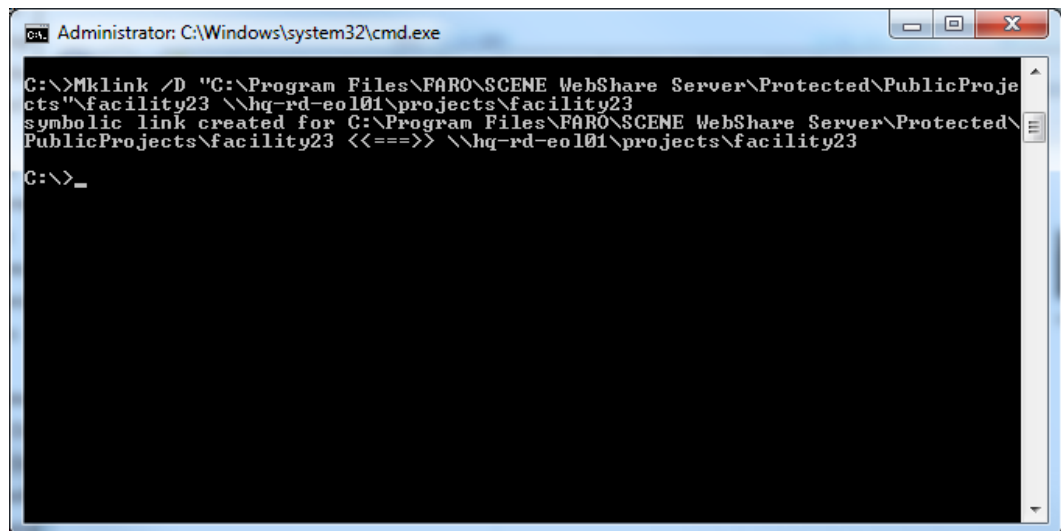


**Figure 34: Create symbolic link for a local hard drive**

When using network shares as project locations, it is important to use the target machine name instead of a mapped drive letter when creating the symbolic link. For example, if you have mapped the target machine that is located somewhere in your network as drive Z, please do not use the path `Z:\Projects\` to create the symbolic link, use `\\machine-name\Projects\` instead. The reason for this is that drive mappings are user and session dependent. Your WebShare server cannot access this session and therefore cannot resolve network drive mappings correctly. To integrate the project from the network resource, type in the following command into your administrator console:

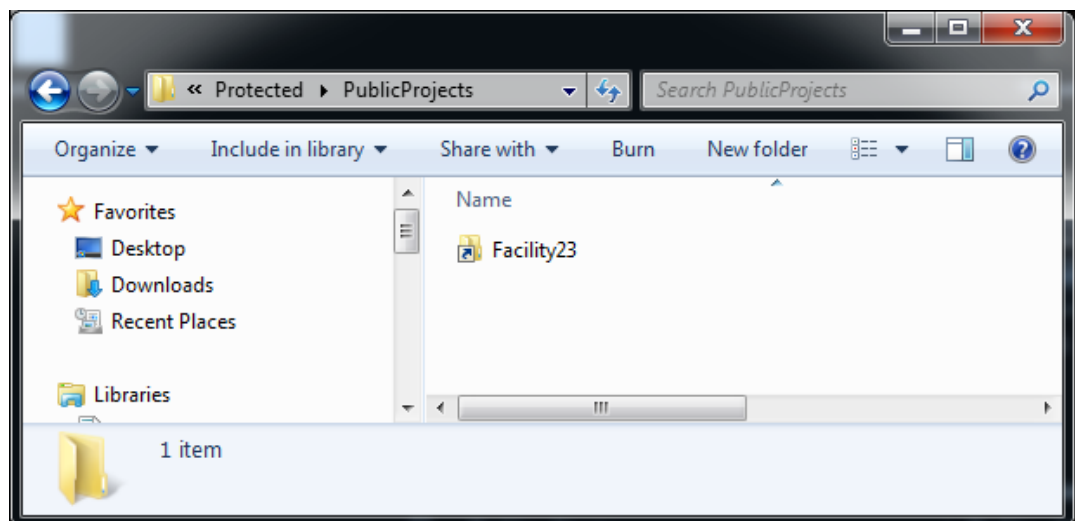
```
Mklink /D "C:\Program Files\FARO\SCENE WebShare Server\Protected\PublicProjects\facility23 \\machine-name\projects\facility23
```

Then press enter.



**Figure 35: Create symbolic link for a network drive**

As soon as the symbolic link has been created in the command line window, you will find a symbolic link to Facility23 inside your *PublicProjects* folder afterwards:



**Figure 36: PublicProjects folder**

WebShare will now use this project as if it was copied into the *PublicProjects* folder.



The symbolic link icon may look identical to the link icon which is used by Windows Explorer, but its meaning is different.

If you are using symbolic links to other machines in a computer network, the SCENE WebShare Server service needs additional configuration to display projects from these resources. Please make sure to follow the instructions in chapter 2.4.4: *SCENE WebShare Server Service Configuration* when using symbolic links to network shares.

Instead of linking each project separately you may also just have one folder elsewhere (with several projects in it) and link it into the *PublicProjects* or *Projects* folder once.

## Removing Symbolic Links

If you wish to remove a symbolic link you can delete it in the Windows Explorer.

### 2.4.4. SCENE WebShare Server Service Configuration

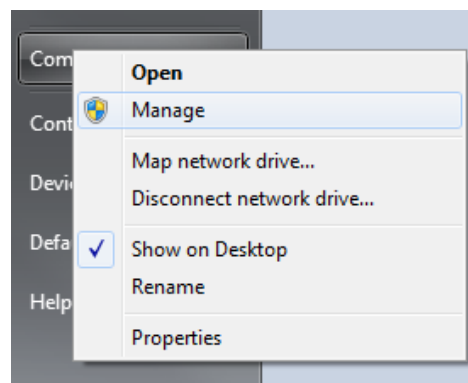
Using symbolic links to network shared drives or other machines in your local area network requires additional configuration of the SCENE WebShare Server Service.



Please make sure you have followed the instructions in chapter 2.4.3: *Creating Symbolic Links*, before continuing with this section.

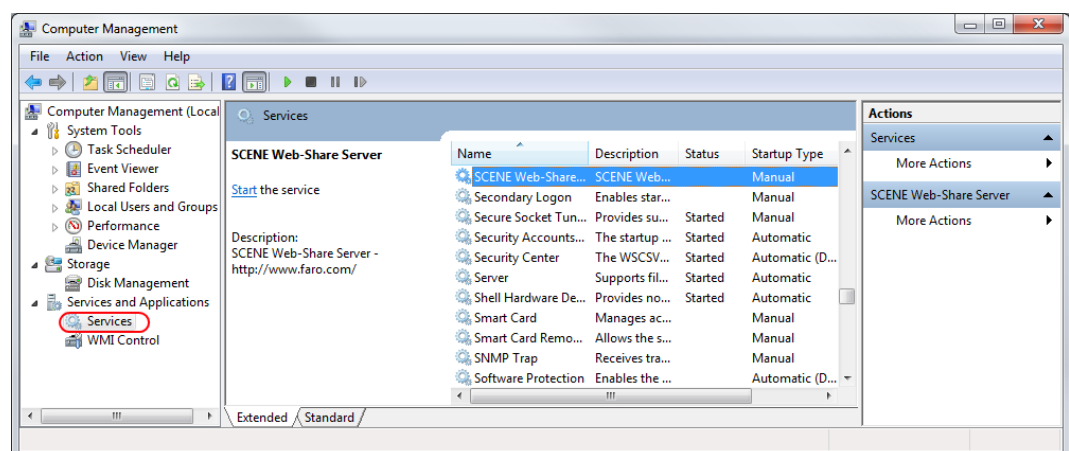
To make the projects from a network drive show up in the WebShare project overview, you need to run the SCENE WebShare Server under a different user account. By default the service is run under the build-in SYSTEM account. However, this account does not have access right to network shares. You need to use an existing account (or create a new account especially for this purpose) that has access rights to the network locations where your projects are saved.

1. Open the Windows service configuration by right clicking **Computer** in the start menu and choose **Manage**.



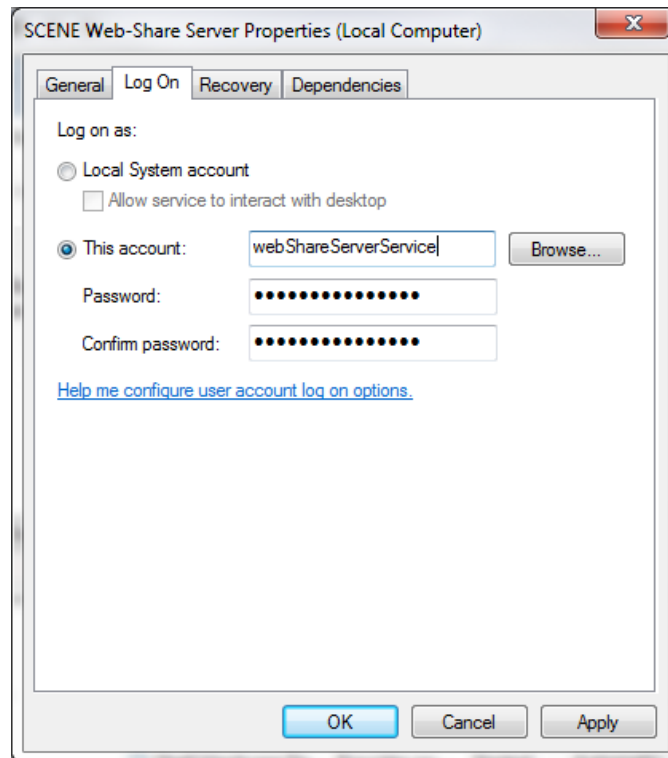
**Figure 37: Open Computer Management**

2. Open the Services window and locate the SCENE WebShare Server service:



**Figure 38: Computer Management**

3. Stop the service and open the service properties and switch to the **Log On** tab.



**Figure 39: Properties of the service**

4. Choose **This account** and enter the account name and password.
5. Confirm the changes and start the SCENE WebShare Server service again.

The projects from the network drives should now show up in the WebShare project selection view. Again, make sure the account has all necessary access rights for the network folders you have included as symbolic links.

### 2.4.5. Checking Access Rights

For protected projects, both the requested user and the WebShare service have to have access rights to all project files.

If the project is accessed via a symbolic link, the access rights of the symbolic link and the folder it points to have to be checked.

Normally the SCENE WebShare service runs under the local system account ("SYSTEM"). The actual account can be seen in the properties dialog of the service.

Popular choices are "LocalService" or "NetworkService". Especially when you have symbolic links pointing to drives outside of your computer, you must have the service running under a different account



"SYSTEM" does not mean "Administrator"!

The access rights are best checked by looking at the "Effective Permissions" in the properties dialog of the folder or symbolic link (tab **Security > Advanced**). User and service should have the rights to "Traverse folder", "List folder", "Read attributes", and "Read permissions".



**Important:** when you use a non-english Windows, even when the GUI is set to English the names of the standard system accounts are localized!

You have to use the localized names when checking the effective permissions, for example. "NETZWERKDIENTST".)

Alternatively you can also login into Windows as the requested user or the service account, and check the accessibility this way. Don't forget to check not only the folders, but also the symbolic link (if applicable).

#### Summary

- Check the effective access rights of the requested user AND the SYSTEM
- Check the effective access rights on the symbolic link AND the folders

## 2.5. Trouble Shooting - Checking IP and Port Configuration

If you followed the steps above precisely but cannot connect to the WebShare server via network, try the following:

On the server machine, open up a browser and enter <http://localhost:8400> as address (if you are using a different port, change the 8400 to the port you are using).

Does the browser address bar change to something like <http://172.17.16.68:8400/.....?>

- Yes: Are both the IP address and the port correct?
- Yes: Check the firewall settings on your network. Make sure to allow incoming TCP connections on the WebShare server port for the server machine as described in chapter 2.4.2: *Making SCENE WebShare Available on Networks*.
- No: Open the index.html file again and make sure the IP address and port are both entered correctly. Details are described in chapters 0 *Updating the server configuration*, 0: *Adapt Automated Redirecting* and 0: *What's my IP address?*
- No: Double check the entries in the index.html file as described in chapter 2.4.2: *Updating the server configuration*.



**IMPORTANT: At this point clear your browser cache!**

Try to connect again. Do you see the WebShare starting page now?

- Yes: Congratulations, everything works!
- No: Does the browser address bar change to something like <http://172.17.16.68:8400/.....?>
  - Yes: There is still something wrong with changes in your index.html file.
  - No: Your server is probably not listening on the specified port. Refer to chapter 2.4.1: *Connector Port Configuration* and make sure the port numbers match!

Another reason for this may be wrong settings in any of your network firewalls. If your Windows Firewall is set up as described in chapter 2.4.2: *Making SCENE WebShare Available on Networks* it is now time to talk to your network administrator. Make sure inbound TCP connections on your WebShare server port are allowed for the WebShare server machine.

A step-by-step guide for installing a SCENE WebShare Server can be found in chapter 2.3.

## 2.6. Project Folders

Your SCENE WebShare Server has two dedicated default projects directories. Both of which are located within the installation folder, for example

```
C:\Program Files\FARO\SCENE WebShare Server\Protected\Projects
```

```
C:\Program Files\FARO\SCENE WebShare  
Server\Protected\PublicProjects.
```

The `Projects` folder is for projects with restricted access, the `PublicProjects` folder for public WebShare projects. Put your SCENE WebShare projects into one of these folders. You can create an arbitrary number of subfolder levels, e.g. `PublicProjects\Castles in Europe\Castles in France\Castles in Paris`, and put projects into each level.

You can also put your projects in other folders, even in folders on other hard drives. For more information on this, please refer to chapter 2.6.3.

### 2.6.1. Public Projects

If you put your projects into the `PublicProjects` folder, they will be visible via WebShare for everyone without the need to log in.

If a user connects to the SCENE WebShare Server, the server will initially not recognize the user nor will it know about the user name or password. This is true even when the user connects to a locally installed server. The user will be considered anonymous until a login is successfully performed. Until this point only public projects will be visible/accessible.

If you want to use public access to some or all of your WebShare projects, simply put these projects into the `PublicProjects` folder. All projects inside this folder will be accessible to all anonymous as well as to registered users.

### 2.6.2. Projects with Restricted Access

Unlike public projects, restricted projects will not show up for any user without sufficient access rights and will not be accessible via WebShare for anonymous users.

All projects inside the `Projects` folder will only be visible to registered users with appropriate access rights. The actual visibility and accessibility is controlled by the standard user management of Windows. Therefore, users have to login into SCENE WebShare with their login information of Windows first before they can access any of the data inside the `Projects` folder. Please see chapter 2.8 for more information.

An Internet browser can access the projects only within the WebShare application and its user management. The projects cannot be explored by uncontrolled browser access.

#### Checking Access Rights

For protected projects, both the requested user and the WebShare service have to have access rights to all project files.

If the project is accessed via a symbolic link, the access rights of the symbolic link and the folder it points to have to be checked.

Please see chapter 2.4.5 for more information.

### 2.6.3. Organizing Project Folders

Since WebShare projects can easily contain several Gigabytes of data if scans are included, disk space may be an issue on your server's programs hard drive disk. You may also put your projects on a different drive than the installation, and then create links from their default location to their actual location. For this, symbolic links<sup>1</sup> have to be used. In Windows 7 and Windows Vista, symbolic links are created with the command line utility *mklink*.

Instead of linking the whole default public projects folder as shown in this example, you can create links for single projects within the default projects folders, too.

In Windows XP you have to use third party tools to create symbolic links. These can be found on the Internet<sup>2</sup>.

### 2.6.4. Adding Meta Information to WebShare Projects

**SCENE  
versions  
earlier than  
version 5.1**

You can provide Meta information with your WebShare project. This information will be displayed in the WebShare project overview. It includes project description, key words, project geo-reference and a preview image.

To add such meta information, simply create files containing the corresponding information in your project's folder that are named as follows:


- *@description.txt*: Text file that contains the project description
- *@georeference.txt*: Text file that contains a comma separated GPS coordinate
- *@keywords.txt*: Text file that contains comma separated keywords for the search feature
- *@preview.jpg* for the project's preview image

**SCENE  
version 5.1  
and newer**

These files will be created automatically if you prepare your WebShare project with the WebShare upload that is available in SCENE since version 5.1. For more information, see chapter **Fehler! Verweisquelle konnte nicht gefunden werden..**

### 2.7. Providing Terms of Service Information

The WebShare server administrator can provide terms of service information. This information will be displayed in the info dialog that will be available by

clicking the  icon in the WebShare user interface.

Create a text file with the name **terms-of-service.txt** and add it to this folder:

```
{SCENE WebShare Server}\webapps\DebugTomcat\WebScene\files
```



The content is displayed as raw text. The user won't be able to click on links contained in the text.

<sup>1</sup> See also [http://en.wikipedia.org/wiki/Symbolic\\_link](http://en.wikipedia.org/wiki/Symbolic_link)

<sup>2</sup> E.g. <http://technet.microsoft.com/en-us/sysinternals/bb896768.aspx>

## 2.8. User Management

The SCENE WebShare Server utilizes the standard user management of Windows. You can define Windows users or user groups to control access to your non-public WebShare projects. These projects are in the {SCENE WebShare Server}\Protected\Projects folder. Remember that all projects in {SCENE WebShare Server}\Protected\PublicProjects are publicly accessible without logging in and can not be restricted by the restriction management of Windows!

Permissions for non-public projects can be set up for individual users or user groups for either individual projects or the complete Projects folder.

Refer to the help section of Windows for more information on user management and managing multiple user accounts.



Please make sure to restrict access according to your needs, once you start managing multiple WebShare user accounts.

User accounts must have a password, else the user cannot upload data to the WebShare server using the built-in upload function of SCENE. For more information, see the SCENE User Manual or chapter 3.

**Attention!** Currently the user names and passwords are **not** transferred on a secure connection! We therefore recommend not to use your existing user accounts, but to create new ones, which are only used within the WebShare data.

## 2.9. Connection Port

By default, the SCENE WebShare Server is running on port 8400, so it will not get in conflict with any other Web service running on your system. You may freely configure that port to your individual needs; however you have to make sure that the configured ports for the SCENE WebShare Server are not used by other applications. Port configuration is done as follows:

Open the **server.xml** file located at {SCENE WebShare Server}\Conf\server.xml. Search for the main connection port entry, that looks like this:

```
<Connector
    URIEncoding="UTF-8"
    port="8400"
    protocol="HTTP/1.1"
    connectionTimeout="20000"
    redirectPort="9400" />
```

Where port 8400 is the port the application is using for connections. Change this number with the port number you want to use.



When changing the connection port, make sure to adjust the http redirection as well (see chapter 2.10).

After having changed the port number, you have to restart the SCENE WebShare Service (see chapter 2.1).

For extended port configuration please refer to the **Tomcat Server** manual<sup>3</sup>.

## 2.10. HTTP Redirection

The SCENE WebShare Server uses an http redirect to point from the Web server's root folder to the WebShare application main folder. You have to change this redirection if:

- You want to access the SCENE WebShare Server with a different address than `localhost`, for example if you want to access it from a different computer.
- You changed the connection port

The redirection is located in `{SCENE WebShare Server}\webapps\root\index.html`.

If you want to access the SCENE WebShare Server from a different computer, change all appearances of `localhost`. Replace all `localhost` appearances with the IP address of the server. If you have changed the connection port according to chapter 2.9, replace all appearances of the previous connection port (`8400` by default) with the new port number.

## 2.11. Settings

Since WebShare 5.0, the WebShare server administrator is able to configure various settings using a configuration file. The file can be found in the folder `{SCENE WebShare Server}\webapps\DebugTomcat\WebScene\config` of your WebShare installation and is named **config.xml**. The settings apply to all WebShare users. A change to the configuration file automatically affects every user accessing WebShare after the change.

At the moment, the following server-wide settings are available. A detailed description for them can be found in the configuration file.

- **UseWidescreenMode**: Use the widescreen mode when the aspect ratio is larger than 2:1.
- **ShowListViewInWidescreenMode**: In widescreen mode also show the scan list.
- **MaximalScannerDistance**: Distance in meters up to which the other scans are visible in the panorama.
- **LengthUnit**: Initial length unit.
- **AreaUnit**: Initial area unit.
- **ScanThumbnailSize**: Initial size of the scan thumbnails in the scan list.
- **MapZoomLevel**: Initial zoom level of the overview map.
- **PanoramaSDQuality**: Quality of the sphere used to display the panorama in the standard mode.
- **PanoramaHDQuality**: Quality of the sphere used to display the panorama in the high-definition mode.
- **UseScanAgeInMap**: Enable the scan age based coloration of the overview map. (only available for projects exported with SCENE 5.0 and later). If this feature is enabled, you may configure the color scale with the **scan-age-color-scale.xml** configuration file in the folder `{SCENE WebShare`

<sup>3</sup> <http://tomcat.apache.org/tomcat-6.0-doc/index.html>

Server}\webapps\DebugTomcat\WebScene\config of your WebShare installation. A detailed description how to change the age limits and associated colors can be found in the color scale configuration file.

- **HierarchicalProjectOverview:** Use the hierarchical project overview.
- **EnableUserLogging:** Activate the logging of user activity on the WebShare server. For more information, see chapter 2.12.
- **WebShareMinimalFreeMemory:** Set the minimal free memory in MBytes available on the server below which WebShare no longer accepts new users.

## 2.12. Logging of User Activity

WebShare supports the logging of user activity. This makes it easier to identify the cause of problems such as failed project uploads. To respect the privacy of WebShare users the logging feature is disabled by default and needs to be activated in the config.xml file first (see chapter 2.11). We recommend to provide appropriate terms of service in this case (see chapter 2.7).

A folder for all the log files of a day is created in the logs\user-activity folder of the WebShare server root folder, e.g. C:\WebShare\logs\user-activity\2012-06-25. A log file is created for each IP address (named **yyyy-mm-dd-123.123.123.123.txt**) and logged-in user (named **yyyy-mm-dd-UserName.txt**) that accessed the WebShare application during that day.

Note that a user can only be identified by his name when he is logged in. Before logging in, his actions are written to an IP address log file.



### Important:

FARO ASSUMES NO LIABILITY IF THE LOGGING OF USER ACTIVITY VIOLATES YOUR LOCAL PRIVACY LAWS!

### 2.12.1. Log File Content

All lines of a log file consist of four columns which are separated by a ",".

The first column contains the current date and time (*yyyy-mm-dd hh:mm:ss*).

The second column contains a unique identifier (UUID) to identify the session. A single user might start multiple sessions, e.g. by opening several browser windows at once.

The third column contains a keyword for the action that the user carried out, e.g. opening a project.

The fourth column contains more information about the user action, e.g. the name of the opened project.

#### Example:

2012-04-27 15:11:20, 298607E8-2A09-181B-1080-5EF5F37978E7, OPEN\_PROJECT, CastleFavorite

The following user actions are logged:

- *LOGFILE\_FOR, UserName* <-- The user name or the IP address is always repeated in the first line of a log file.
- *CONNECT, 123.123.123.123* <-- For visitors only known by their IP address.

- `LOGIN, 123.123.123.123 <--` For logged-in users.
  - `DISCONNECT, 123.123.123.123 <--` For visitors only known by their IP address.
  - `LOGOUT, 123.123.123.123 <--` For logged-in users.
  - `OPEN_PROJECT, ProjectName`
  - `OPEN_SCAN, ProjectName # ScanName <--` The project name is added in front of the scan name so that scans in different projects with the same name can be identified easily. # is used as delimiter between project name and scan name.
  - `DOWNLOAD_WORKSPACE, ProjectName <--` The workspace was successfully downloaded.
  - `DOWNLOAD_SCAN, ProjectName # ScanName <--` The scan was successfully downloaded. # is used as delimiter between project name and scan name.
  - `DOWNLOAD_MAP, NO_INFO <--` The overview map was successfully downloaded.
  - `PROJECT_UPLOAD_START, UploadFolder/ProjectName`
  - `PROJECT_UPLOAD_PAUSE, UploadFolder/ProjectName`
  - `PROJECT_UPLOAD_RESUME, UploadFolder/ProjectName`
  - `PROJECT_UPLOAD_ABORT, UploadFolder/ProjectName`
  - `PROJECT_UPLOAD_FINISH, UploadFolder/ProjectName`
  - `RETRIEVE_PROJECTS_WEBSHARE_FOLDERS, ProjectName1 # ProjectName2 # ProjectName3 <--` A list of all identified WebShare projects that appear in the project overview. # is used as delimiter between the projects.
  - `RETRIEVE_PROJECTS_NOT_WEBSHARE_FOLDERS, FolderName1 [NO_REPOSITORY] # FolderName2 [FOLDER_NOT_ACCESSIBLE] <--` A list of folders that were found which didn't contain valid WebShare projects. If one of these folders was expected to contain a valid WebShare project, it might be possible to identify the problem by having a look at the following error message standing in the [] brackets. # is used as delimiter between the folders.
- Possible error messages**
- `[NO_REPOSITORY] <--` The project file ScanProject.fpr or ScanProject.dat (for WebShare exports carried out with SCENE 4.8.4 or earlier) was not found. This is the standard error message for a folder that doesn't contain a WebShare project.
  - `[READING_REPOSITORY_FAILED] <--` It was not possible to read the project file ScanProject.fpr or ScanProject.dat.
  - `[NO_WEBSHARE_DATA] <--` No WebShare data was found.
  - `[FOLDER_NOT_ACCESSIBLE] <--` The folder couldn't be accessed, e.g. because the SCENE instance running on the WebShare server didn't have the rights to read the folder.
  - `[UNKNOWN_ERROR] <--` The folder was accessible, but an unknown error occurred when reading its content.

## 2.12.2. Importing the Log File into Microsoft Excel

The log files can be opened and edited with Microsoft Excel and other spreadsheet programs.

If "," is set as default delimiter in Excel, columns for the date, session id, activity name and activity content are created automatically. However, in European Excel versions, ";" is usually set as default delimiter.

Carry out the following steps to import the text file (approach in Excel 2010):

6. Open Excel.

Select **From Text** in the **Data** section.

Open the log file.

The text conversion assistant opens:

- a) Select the option Delimited - Characters such as commas or tabs separate each field.
- b) Select the default delimiter as delimiter (maybe you have to enter it), deselect other checkboxes.
- c) Change data format of the 1st column to Date.
- d) Select the Finish button to finish the text conversion.

Complete the import by clicking **OK** in the import data dialog.

## 2.13. Updating a SCENE WebShare Server

If you want to update a WebShare server with a newer version it is important to uninstall the old version of the WebShare server before updating.

Before updating a SCENE WebShare Server do the following:

- Backup all files that have been *manually* changed since the installation of the old version. This may include the following files:

\webapps\DebugTomcat\WebScene\config\config.xml (see chapter 2.11)

\webapps\DebugTomcat\WebScene\config\scan-age-color-scale.xml  
(see 2.11)

\webapps\DebugTomcat\WebScene\files\terms-of-service.txt (see chapter 2.7) and the other files in this folder

\webapps\ROOT\index.html (see chapter 2.4.1)

\conf\server.xml (see chapter 2.4.1)

- Stop the old SCENE WebShare Server with the Windows administrative tool *Services*.
- Uninstall the old SCENE WebShare Server. Do this by executing the **unins000.exe** file in the installation folder or with the Windows tool *Programs and Functions*. The deinstallation does not delete the server log files or the project folders.
- Install the new SCENE WebShare Server as described in chapter 2.2. You can select the same directory as destination for the new SCENE WebShare Server.
- Copy the backed up files from the \webapps\DebugTomcat\WebScene\files\ folder to the corresponding folder of the new WebShare server installation.
- Open the newly installed versions of the backed up xml and html files mentioned above and re-apply the changes again using the backed up files as blueprints. Do not simply replace the installed files with the backed up files.

### Updating a SCENE WebShare Server

- Reboot the computer.
- Check if the access rights are still available. If not, you have to define them once more. See chapter 2.4.5 for detailed information.

### 3. Transferring WebShare Data to the SCENE WebShare Server



To publish and share your scan project over the web, WebShare data has to be created from your scan project with SCENE. Once created this data has to be transferred to one of the project folders (see chapter 2.6) of the WebShare server.

If your WebShare project has documentation objects with links to local files, you may create a sub-folder called `Documents` in the project's directory on the WebShare server and copy those files to this folder. They can then be opened and viewed with WebShare.

Transferring WebShare data to the WebShare server differs depending on the version of SCENE that was used to create the WebShare data. This is described in the following chapter.

#### 3.1. Transferring Data Created with SCENE 5.3 and newer

To prepare WebShare data that was created with SCENE 5.3 and to create the upload package, do the following:

- Open the scan project with SCENE 5.3.
- Create SCENE WebShare data by selecting **File > Scan Project > Create WebShare Data** in the main menu of SCENE WebShare Server, or, click the small arrow beneath the Upload WebShare Data button  in the Scan Project toolbar, then click **Create WebShare Data**.
- Select **File > Scan project > Upload WebShare Data** in SCENE, or, click the small arrow beneath the Upload WebShare Data button  in the Scan Project toolbar, then click **Upload WebShare Data**.
- Make your settings in the upcoming dialog.
- In the **Transfer Settings** of this dialog select whether to upload manually or automatically with SCENE's WebShare upload:
  - If you selected to transfer the data **manually**, you will be prompted to specify a storage location for the upload package on your local hard disk. The package will be saved to an extra folder within the specified location. This folder is named as follows:
 

```
<Project Name>_WebShare_<YYMMDD_HHMMSS>
```

(for example, `MyScanProject_WebShare_120806_164219`).
  - You can then transfer this folder to one of the project folders on the WebShare server.
  - If you selected to transfer the data with SCENE's WebShare upload, follow the instructions on the screen.

Please refer to the SCENE 5.3 or SCENE 5.4 User Manual for more information.

#### 3.2. Hierarchical Project Overview

You can group projects that belong together so that they are placed into one folder element in the WebShare project overview.



**Figure 40: Folder element of grouped projects in the WebShare project overview**

To group projects, open the folder on your WebShare server that contains your projects, e.g. `PublicProjects`, create a new subfolder, e.g. `Castles in Europe`, and simply move the corresponding projects into this folder. You can create an arbitrary number of subfolder levels, for example `PublicProjects\Castles in Europe\Castles in France\Castles in Paris`, put projects into each level and define individual access rights for each of this folders.

You can add the same meta information files (*@description.txt*, *@georeference.txt*, *@keywords.txt*, *@preview.jpg*) to folders as to projects. For more information, see chapter 2.6.4.

If you want all projects to appear in a flat list in the project overview, you can deactivate the hierarchical display in the configuration file. For more information, see chapter 2.11.

## 4. Accessing WebShare Data

### 4.1. SSL Connection

The SCENE WebShare server now supports secure SSL connections when accessing the WebShare data with a browser.



SSL isn't supported by the project upload within SCENE. The uploader has to use the old non-SSL URL in the upload dialog, for example:

`http://localhost:8400`

To enable SSL, you have to carry out the following steps.

1. Stop the WebShare server.
2. Put the keystore file that contains the server certificate in the root folder of the WebShare server installation. For example, if the keystore file is named `keystore.jks` and your root folder is `C:\Program Files\FARO\SCENE WebShare Server`, the file has to be put at:

`C:\Program Files\FARO\SCENE WebShare Server\keystore.jks.`



Only JKS, PKCS11 or PKCS12 format keystores are supported by the WebShare server.

You can find more information about server certificates and the keystore file in Apache Tomcat's SSL documentation at <https://tomcat.apache.org/tomcat-7.0-doc/ssl-howto.html>. In particular, you can find information how to create a self-signed certificate with JAVA's tool `keytool` and how to obtain and use a certificate from a trusted certificate authority like VeriSign.com.



**Do not alter the server configuration files mentioned here yet!**

3. Open the `server.xml` file located at

`{SCENE WebShare Server}\Conf\server.xml.`

Find the SSL connector element which looks like this:

```
<!--
<Connector URIEncoding="UTF-8" port="8443"
protocol="org.apache.coyote.http11.Http11Protocol"
    connectionTimeout="20000"
    SSLEnabled="true" scheme="https" secure="true"
clientAuth="false" sslProtocol="TLS"
    keystoreFile="keystore"
    keystorePass="changeit" />
-->
```

- a. Remove the XML comment tags `<!--` and `-->` around the `<Connector ... />` XML element.
- b. If necessary, change the port attribute for the port number that is used for SSL connections, e.g. to `port="9443"`
- c. If necessary, change the `keystoreFile` attribute for the file name of the keystore file, e.g. to `keystoreFile="keystore.jks"`
- d. If necessary, change the `keystorePass` attribute for the password used to access the keystore file, e.g. to `keystorePass="wwUlK5BI4qvgcKG3JtkeC9Go"`
- e. If necessary, add a `keyPass` attribute before the closing `/>` for the password used to access the server certificate in the keystore file. If not specified, the password given in the `keystorePass` attribute will be used. E.g. add `keyPass="lRLiIFmpbm32cxHAnaQpKug"`
- f. If necessary, add a `keyAlias` attribute before the closing `/>` for the alias of the server certificate in the keystore. If not specified, the first key read in the keystore will be used. E.g. add `keyAlias="www.xyz.com"`
- g. If the keystore has the format PKCS11 or PKCS12, add a `keystoreType` attribute with the format name as value. E.g. add `keystoreType="PKCS12"`
- h. You can find additional configuration attributes at [https://tomcat.apache.org/tomcat-7.0-doc/config/http.html#SSL\\_Support\\_-\\_BIO\\_and\\_NIO](https://tomcat.apache.org/tomcat-7.0-doc/config/http.html#SSL_Support_-_BIO_and_NIO)

If it was necessary to apply all the changes mentioned above, the finished `<Connector ... />` XML element will look like this:

```
<Connector URIEncoding="UTF-8" port="9443"
protocol="org.apache.coyote.http11.Http11Protocol"
    connectionTimeout="20000"
    SSLEnabled="true" scheme="https" secure="true"
clientAuth="false" sslProtocol="TLS"
    keystoreFile="keystore.jks"
    keystorePass="wwUlK5BI4qvgcKG3JtkeC9Go"
    keyPass="lRLiIFmpbm32cxHAnaQpKug"
    keyAlias="www.xyz.com"
    keystoreType="PKCS12" />
```

Make sure that you have removed the XML comment tags `<!--` and `-->`

4. Open the `index.html` file located at `{SCENE WebShare Server}\webapps\ROOT`
  - a. Search for all http URLs in the document (usually 4) and replace them with the new https URL, including the port number if you don't use the SSL default port 443. The port number must be the same as the one given in the port attribute of the `<Connector ... />` element.

For example, the redirect link at the bottom of the document may previously have looked like this:

```
<a
href="http://www.xyz.com:8400/DebugTomcat/WebScene/WebScene.html">here</a>
```

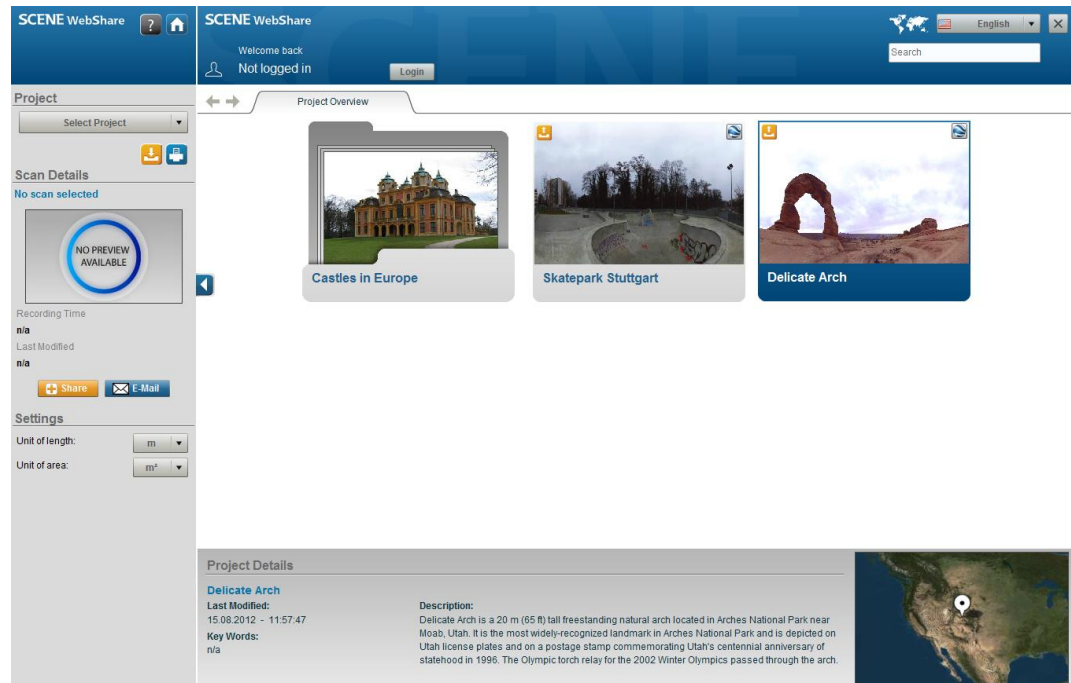
After your changes it may look like this:

```
<a
href="https://www.xyz.com:8443/DebugTomcat/WebScene/WebScene.html">here</a>
```

5. Open the config.xml file located at {SCENE WebShare Server}\webapps\DebugTomcat\WebScene\config.
  - a. Search for the EnableSSL attribute and set its value to true.
  - b. Search for the SSLRedirect attribute and set its value to the https URL that you want as redirect goal for users that access the old http URL. Please use the shortened URL without the DebugTomcat/WebScene/WebScene.html postfix. E.g. change it to `<Value value="https://www.xyz.com:9443/" />`
6. Start the WebShare server again.

## 4.2. Start WebShare

Start the Web browser of your choice and enter the address of your new SCENE WebShare Server (<http://localhost:8400> if you are using the server computer or [http://IP\\_ADDRESS\\_OF\\_WebShare\\_SERVER:8400](http://IP_ADDRESS_OF_WebShare_SERVER:8400) if you are connecting from another computer via the Internet or the local network. See chapters 2.9 and 2.10 for more information on this.



**Figure 41: WebShare Projects Overview**

## 5. Trouble Shooting

- Did you reboot the computer after installation in order to start the SCENE WebShare Server?
- If your SCENE WebShare Server does not start up correctly, please check the **Java** Runtime Environment.

It is possible that the JRE\_HOME and JAVA\_HOME system variables of Windows are not set correctly.

They are not necessary for the SCENE WebShare Server when it runs as a Windows service. In this case you can delete them.

However, if the JRE\_HOME and JAVA\_HOME system variables are needed for another program they must point to the correct Java folder on your PC. Otherwise the Windows service for the SCENE WebShare Server won't be installed correctly.

JRE\_HOME must point to the JRE (Java Runtime Environment) folder, e.g. C:\Program Files\Java\jre6.

JAVA\_HOME must point to the JDK (Java Development Kit) folder, e.g. C:\Program Files\Java\jdk1.6.0\_24. If no JDK is installed, JAVA\_HOME must not exist.

You can set or delete both system variables in Windows 7 as follows:

- Right-click the **My Computer** icon on your desktop or in the Windows start menu and select **Properties**.
- Click **Advanced System Settings** in the navigation menu.
- In the **Advanced** tab, click on the **Environment Variables** button.
- Under **System Variables** search for the JRE\_HOME and/or JAVA\_HOME entry and verify that they point to the correct folder or delete them.
- Restart the computer.
- In case you updated the SCENE WebShare Server to a newer version but the WebShare server can't be started after the update: The old version of the WebShare server might not have been uninstalled before the update or uninstalling didn't work correctly. Try the following to resolve the issue:
  - In the Windows administrative tool *Services* find the entry for the SCENE WebShare Server (usually *SCENE WebShare Server x64*) and stop the service.
  - In the Windows administrative tool *Programs and functions* find the entry/entries for the SCENE WebShare Server/s and uninstall it/them.
  - Install the new SCENE WebShare Server again.

Please see chapter 2.13 for more information.

- In case you are using a server IP other than *localhost*, and the browser cannot open <http://localhost:8400/DebugTomcat/WebScene/WebScene.html> : Please check your HTTP redirection as it is explained in chapter 2.10
- You changed the HTTP redirection, but your web browser seems to ignore it and still uses the old files: Some web browsers try to stick to cached files as long as possible and try to use the cached file instead of the file on the server. If other browsers work fine, try to delete all cached files of your standard browser to make sure the browser has to load all files from the server next time. When using Firefox pay special attention to clearing the

*Offline Website Data* (**Tools > Options > Privacy > Clear History Settings**).

- If your project is not showing up in the project overview screen, this may be because of the following reasons:
  - The project is a private project and you are not logged in. You have to login in with your user account to access private projects.
  - The project is a private project, you are logged in but your account does not have Windows access rights for the project's folder. Make sure to adjust user access rights when adding new user accounts or private projects.
  - Check if the Windows Netlogon service is running on the server machine. Depending on your Windows environment this service may be needed for proper operation of the SCENE WebShare Server. The service's name may differ when using a non-English version of Windows.
  - Check if the SCENE WebShare Server folder is correctly referenced in the registry of Windows. Open the registry editor (open command prompt of Windows, type regedit.exe, press enter) and check the following keys:

32 bit version of Windows:

HKEY\_LOCAL\_MACHINE\SOFTWARE\FARO\WebShareServer\Settings

64 bit version of Windows:

HKEY\_LOCAL\_MACHINE\SOFTWARE\Wow6432Node\FARO\WebShare Server\Settings

*Make sure the `REG_EXPAND_SZ` key `WebServerFolder` exists and that it points to the correct folder (where your WebShare server is installed).*

- If the **browser redirection** fails or shows a blank page, this may be because of the following reasons:

After installing the new version of the WebShare server you forgot to enter the correct address of your server in `index.html` file located at `$WebShareServerDir\webapps\ROOT`

If you updated your `index.html` properly, try clearing your browser cache. Often times aggressive browser caching techniques prevent loading of the updated files.

- If you have changed the **server port** and now you cannot connect to the server anymore:
  - Check `$WebShareServerDir\conf\server.xml`. Did you enter the correct port number?
  - Check `$WebShareServerDir\webapps\ROOT\index.html`. Are all occurrences of the port number up to date?
  - Make sure the service was restarted correctly and is up and running again.
  - Check your firewall/router settings and make sure the connector port is accessible for your server machine. This may include both the settings of the server machine's Windows Firewall and router settings.

- **Logging in** to the WebShare server fails:

If you are using a domain network account make sure a network connection to the domain controller exists. Logging in with domain accounts will fail if you are not currently connected to the domain network. In this case you should create a local user account.

Make sure the user account is active and not disabled via the user management of Windows.

## 6. Known Issues

Under rare circumstances, the SCENE WebShare Server setup wizard might not prompt the user to select the server startup method. In this case the server startup method has to be setup manually. See chapter 2.2 for more information.

## 7. WebShare and Microsoft IIS Configuration Guide

This guide will teach you how to configure IIS and WebShare to make WebShare servers run behind an IIS instance. This may be useful if you already have an IIS server up and running and want to access WebShare on the same port on the Server machine. Since there can always be only one server running on a dedicated port, you cannot run both WebShare and IIS on port 80 for example. However it may be necessary (most likely due to network restrictions or security settings) to access both servers on the default port (or any other single port number) at the same time. In this case WebShare can be configured to function as a so called worker for the IIS server. The IIS itself will function like a proxy server, passing predefined requests to the WebShare server instance running on a totally different port internally (for example the WebShare default port 8400). Please be aware that this is an advanced configuration guide. This guide will not go into details too much since there is a lot of literature regarding Tomcat workers and IIS available. Use the following resources for further information if necessary:

- Apache Tomcat – IIS Howto:  
[http://tomcat.apache.org/connectors-doc/webserver\\_howto/iis.html](http://tomcat.apache.org/connectors-doc/webserver_howto/iis.html)
- Apache Tomcat Connector Reference Guide  
<http://tomcat.apache.org/connectors-doc/reference/uriworkermap.html>
- Apache Tomcat Connector Generic Howto  
[http://tomcat.apache.org/connectors-doc/generic\\_howto/workers.html](http://tomcat.apache.org/connectors-doc/generic_howto/workers.html)

If your IIS server is already up and running you may skip some of the configuration steps or some of this material will be familiar to you. It is beyond the scope of this guide to cover all possible configurations. All configuration steps will be based on a fresh copy of IIS and SCENE WebShare Server.

### 7.1. Preparations and Prerequisites

Before you start with this guide please make sure that your WebShare server was installed successfully. Please refer to the previous chapters to learn how to install and configure your WebShare server.

Once you are sure that the WebShare server is running as intended, please deactivate the SCENE WebShare Server Service to **turn off the WebShare Server**.

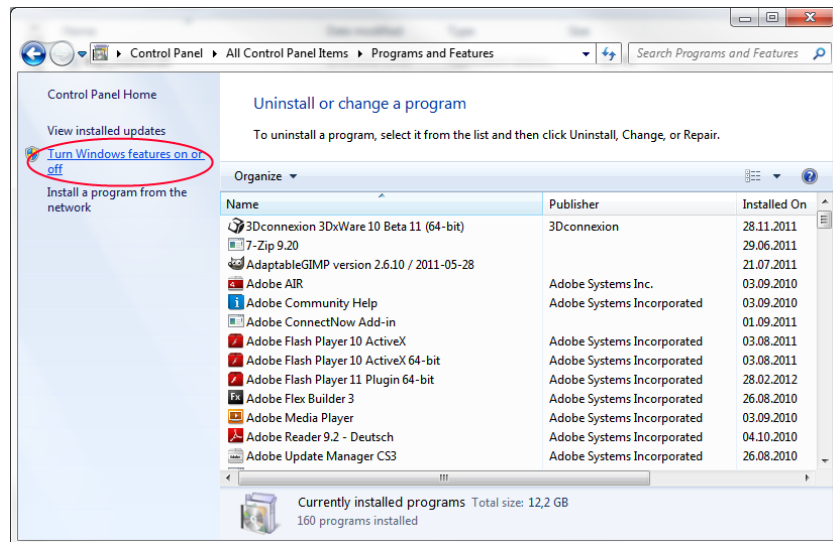
For this guide, the following assumptions are made:

- Your WebShare server is running on the default port 8400.
- Your WebShare server was installed to C:\Program Files\Faro\SCENE WebShare Server

This directory will be referred to as the WebShare server directory.

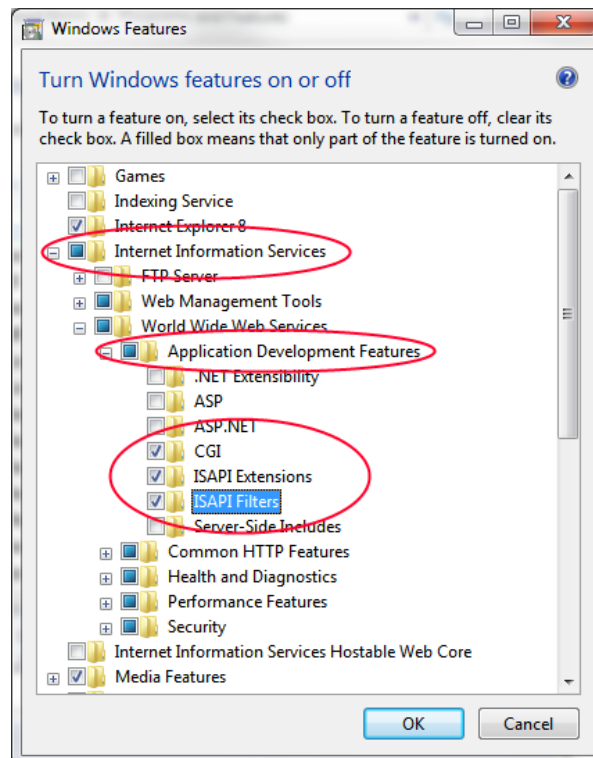
### 7.2. Install and Configure IIS

1. Open the control panel and navigate to the programs and features window. Choose **Turn Windows features on or off** on the left:



**Figure 42: Programs and Features**

The Windows Features window will open. Scroll down to the Internet Information Services and make sure it is turned on. Unfold Internet Information Services, World Wide Web Services and Application Development Features. Make sure CGI, ISAPI Filters and ISAPI Extensions are checked as shown in the screenshot.



**Figure 43: Turn Windows features on or off**

Check if IIS is running correctly. Open <http://localhost> in your favorite web browser. The result should look like this for a fresh install of IIS:



**Figure 44: IIS start page**

If your IIS is already configured you will most likely see your default web site instead.

### 7.3. Tomcat ISAPI Connector Configuration

To allow Tomcat (SCENE WebShare) to function as a worker for IIS you need to set up a Tomcat Connector. First of all you need to download the ISAPI Connector library for your WebShare server. Assuming you are using the 64 Bit version of WebShare you will need this file:

[http://www.apache.org/dist/tomcat/tomcat-connectors/jk/binaries/windows/tomcat-connectors-1.2.35-windows-x86\\_64-iis.zip](http://www.apache.org/dist/tomcat/tomcat-connectors/jk/binaries/windows/tomcat-connectors-1.2.35-windows-x86_64-iis.zip)

All connector packages can be found here:

<http://www.apache.org/dist/tomcat/tomcat-connectors/jk/binaries/windows/>.

Unzip the content of the zip file to your WebShare server's `bin` directory. Make sure the `bin` directory contains a file named `isapi_redirect.dll` afterwards.

**Now you can** go ahead and configure the WebShare part:

1. Open the Windows registry editor. You need to create some new registry keys:

- c. Create a new registry key named `HKEY_LOCAL_MACHINE\SOFTWARE\Apache Software Foundation\Jakarta Isapi Redirector\1.0`

- d. Add a string value with the name `extension_uri` and a value of `/jakarta/isapi_redirect.dll`

- e. Add a string value with the name `log_file` and a value pointing to where you want your log file to be (for example `c:\temp\logs\isapi.log`).

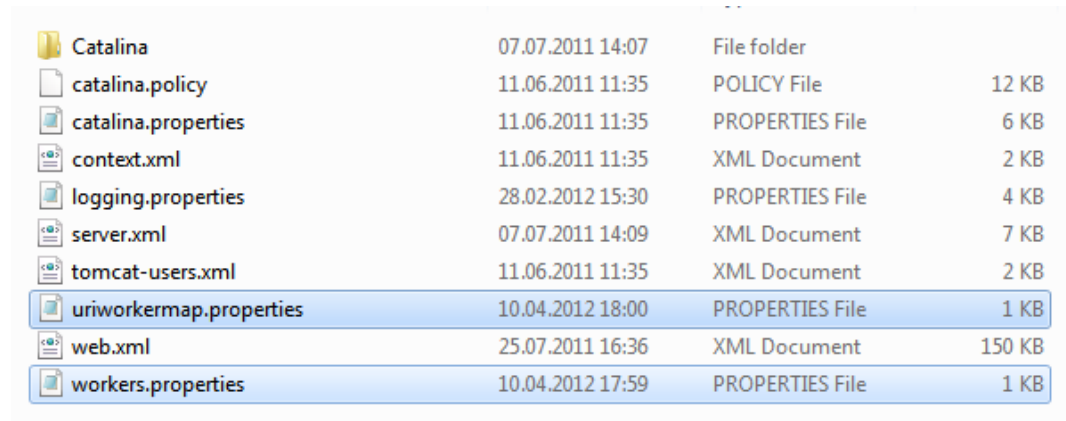
- f. Add a string value with the name `log_level` and a value for your log level (can be `debug`, `info`, `error` or `emerg`).

- g. Add a string value with the name `worker_file` and a value which is the full path to your workers.properties file (`c:\program files\faros\Scene WebShare Server\conf\workers.properties`)

- h. Add a string value with the name `worker_mount_file` and a value which is the full path to your `uriworkermapping.properties` file

(c:\program files\faros\Scene WebShare Server\conf\uriworkmap.properties)

- Open your WebShare server folder in the windows explorer and open the `conf` folder. Create two new text files called **workers.properties** and **uriworkmap.properties**.



Catalina	07.07.2011 14:07	File folder	
catalina.policy	11.06.2011 11:35	POLICY File	12 KB
catalina.properties	11.06.2011 11:35	PROPERTIES File	6 KB
context.xml	11.06.2011 11:35	XML Document	2 KB
logging.properties	28.02.2012 15:30	PROPERTIES File	4 KB
server.xml	07.07.2011 14:09	XML Document	7 KB
tomcat-users.xml	11.06.2011 11:35	XML Document	2 KB
uriworkmap.properties	10.04.2012 18:00	PROPERTIES File	1 KB
web.xml	25.07.2011 16:36	XML Document	150 KB
workers.properties	10.04.2012 17:59	PROPERTIES File	1 KB

**Figure 45: WebShare server folder**

- Open the **workers.properties** file in your favorite text editor and define the worker like this:

```

1  # Define 1 workers to handle webshare requests for an IIS
2  worker.list=worker1
3  # Set properties for worker1 (ajp13)
4  worker.worker1.type=ajp13
5  worker.worker1.host=localhost
6  worker.worker1.port=8009

```

**Figure 46: workers.properties file**

Text for copy/paste:

```

# Define 1 workers to handle webshare requests for an IIS
worker.list=worker1

# Set properties for worker1 (ajp13)
worker.worker1.type=ajp13
worker.worker1.host=localhost
worker.worker1.port=8009

```

If the Tomcat machine is separate from the IIS machine, you need to replace `localhost` with the correct IP address of the WebShare Machine. Port `8009` is used by WebShare server to listen to any redirected requests from IIS. The details about worker configuration can be found here: [http://tomcat.apache.org/connectors-doc/generic\\_howto/workers.html](http://tomcat.apache.org/connectors-doc/generic_howto/workers.html)

- Open the **uriworkmap.properties** file in your favorite text editor and configure it like this:

```

1 # This is an example for a single WebShare worker behind an IIS server
2 /DebugTomcat*=worker1

```

**Figure 47: uriworkermap.properties file**

Text for copy/paste:

```
# This is an example for a single WebShare worker behind an IIS server
/DebugTomcat*=worker1
```

What this will do is redirect all requests to your IIS ending with **/DebugTomcat\*** to your WebShare server once the configuration is complete. If you want to redirect all requests to WebShare you could add another line like **/\*=**worker1****.



Worker configuration can be highly complex and if you need to set up more sophisticated solutions, you need to read the Apache manuals on this topic. Use this as a starting point: <http://tomcat.apache.org/connectors-doc/reference/uriworkermap.html>

- Open the **server.xml** and find the comment entry `<!-- Define an AJP 1.3 Connector on port 8009 -->`

```

86      maxThreads="150" scheme="https" secure="true"
87      clientAuth="false" sslProtocol="TLS" />
88  -->
89
90  <!-- Define an AJP 1.3 Connector on port 8009 -->
91  <Connector port="8009" protocol="AJP/1.3" redirectPort="8400" />
92
93
94  <!-- An Engine represents the entry point (within Catalina) that processes
95       every request. The Engine implementation for Tomcat stand alone
96       analyzes the HTTP headers included with the request, and passes them
97       on to the appropriate Host (virtual host).
98       Documentation at /docs/config/engine.html -->
99

```

**Figure 48: server.xml file**

- Change the `redirectPort` entry to `8400` (the port you are using for WebShare) as shown in the screen shot.
- Save the **server.xml** file.

## 7.4. WebShare Messaging Configuration

The WebShare default message streaming connections cannot be set up reliably if Tomcat is running as a worker behind an IIS. Therefore, streaming connections for WebShare need to be disabled. A polling connection will be used instead to guarantee a reliable connection between client and server.

- Open your WebShare server directory in the windows explorer and navigate to the `webapps\DebugTomcat\WEB-INF\flex` directory. Open the **services-config.xml** file.

2. Navigate to the channel definition of the streaming channel starting with the line

```
<channel-definition id="my-streaming-amf"
class="mx.messaging.channels.StreamingAMFChannel">.
```

3. Replace the user agent settings with the settings shown below. This will disable the use of streaming connections for all browsers:

```
<user-agent-settings>

  <user-agent match-on="MSIE" kickstart-bytes="2048" max-
streaming-connections-per-session="0" />

  <user-agent match-on="Firefox" kickstart-bytes="2048" max-
streaming-connections-per-session="0" />

  <user-agent match-on="*" kickstart-bytes="2048" max-
streaming-connections-per-session="0" />

</user-agent-settings>
```

Internet Explorer and Firefox need to be handled separately here because the Tomcat/BlazeDS foundation of WebShare has predefined streaming connection limits for these two browsers.

```

96      </channel-definition>
97      <channel-definition id="my-streaming-amf" class="mx.messaging.channels.StreamingAMFChannel">
98        <endpoint url="http://{server.name}:{server.port}/{context.root}/messagebroker/streamingamf" class="flex.
99        <!-- Properties section = Workaround for Internet Explorer as to http://bugs.adobe.com/jira/browse/BLZ-378
100      <properties>
101        <max-streaming-clients>10</max-streaming-clients>
102        <idle-timeout-minutes>0</idle-timeout-minutes>
103        <server-to-client-heartbeat-millis>5000</server-to-client-heartbeat-millis>
104      <user-agent-settings>
105        <user-agent match-on="MSIE" kickstart-bytes="2048" max-streaming-connections-per-session="0" />
106        <user-agent match-on="Firefox" kickstart-bytes="2048" max-streaming-connections-per-session="0" />
107        <user-agent match-on="*" kickstart-bytes="2048" max-streaming-connections-per-session="0" />
108      </user-agent-settings>
109    </properties>
110  </channel-definition>
111  <channel-definition id="my-http" class="mx.messaging.channels.HTTPChannel">
```

Figure 49: services-config.xml

## 7.5. Setting Up IIS

1. Open your Internet Information Services (IIS) Manager. It can be found in **Control Panel > Administrative Tools**:

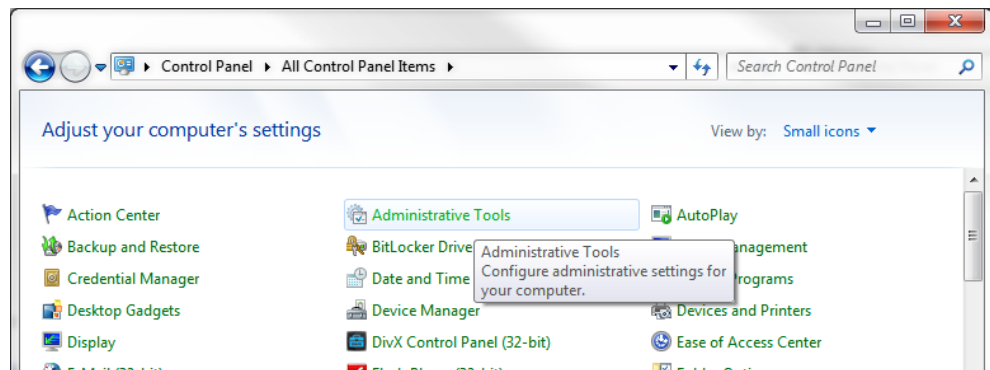
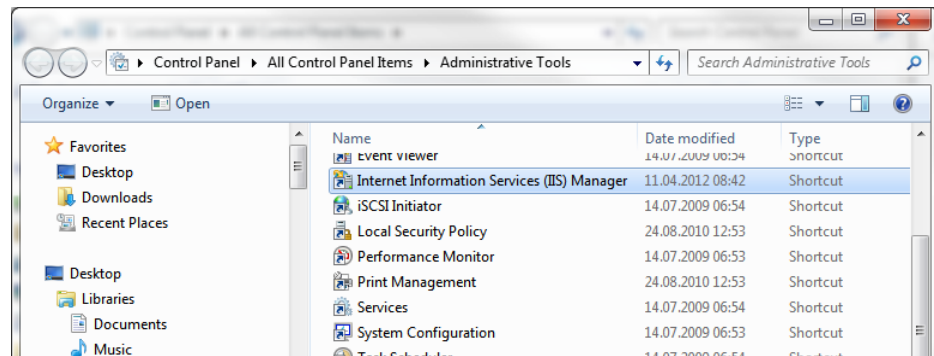
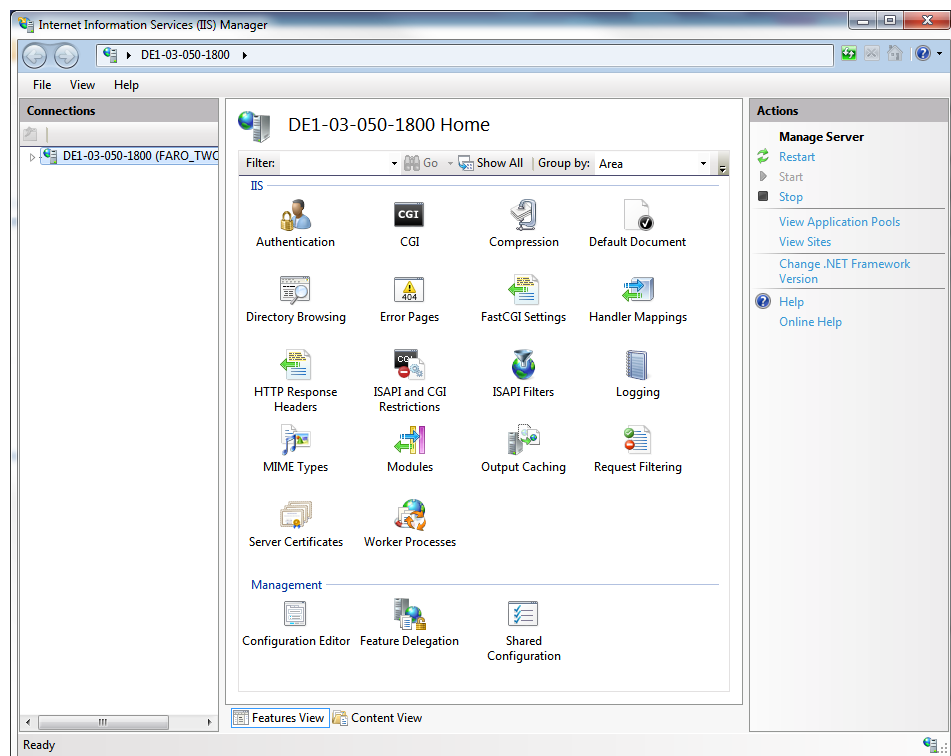


Figure 50: Windows Control Panel



**Figure 51: Windows Administrative Tools**

The IIS Manager looks like this:



**Figure 52: IIS Manager**

2. Make sure that CGI, ISAPI, CGI Restrictions and ISAPI Filters are shown. If any of these are missing please double check your IIS configuration.
3. With your server highlighted on the left, double click on the **ISAPI and CGI Restrictions** icon:

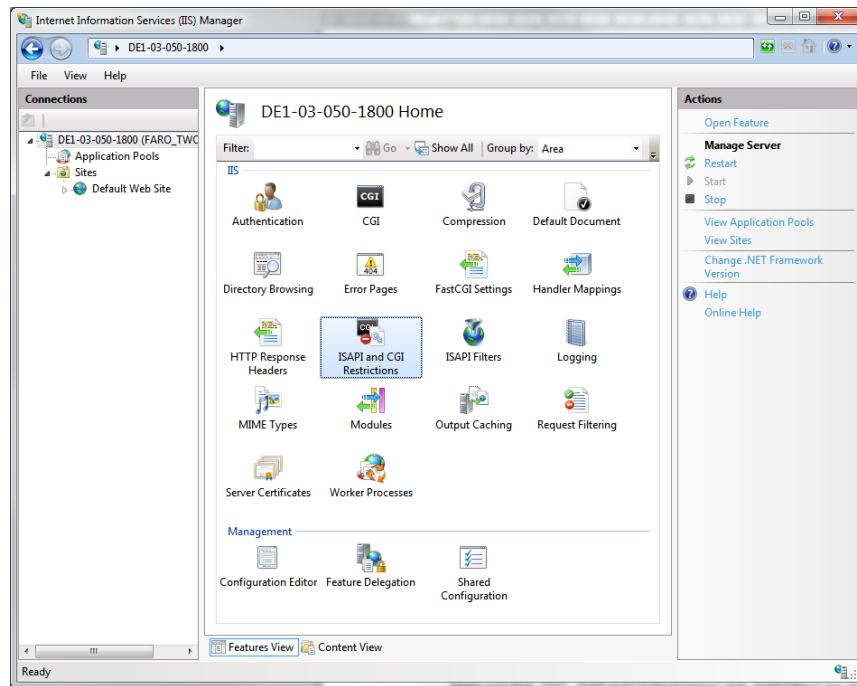


Figure 53: IIS Manager

4. Click **Add** in the right panel to add a new rule:

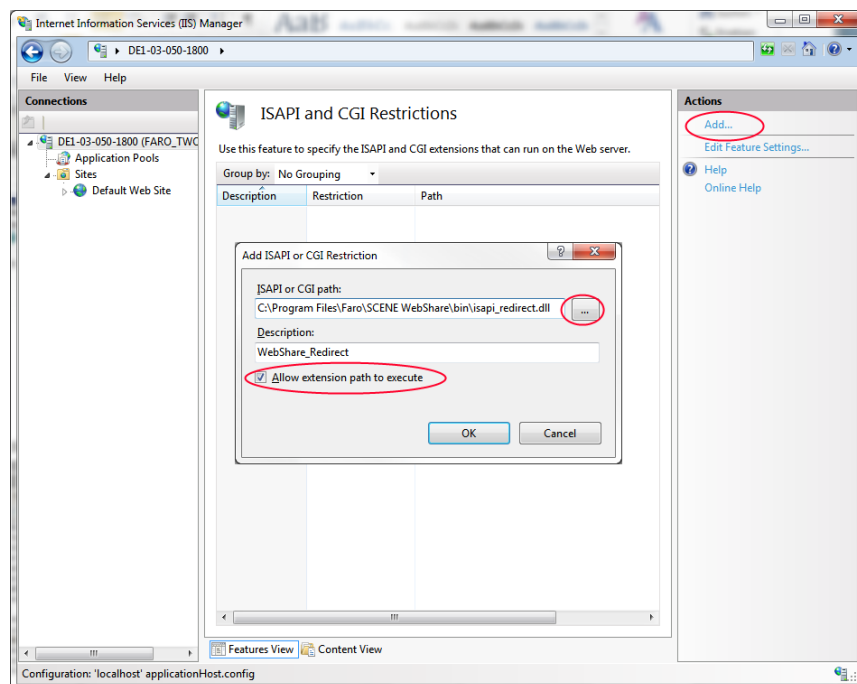


Figure 54: Add ISAPI and CGI Restriction

The ISAPI or CGI path must point to the `isapi_redirect.dll` in your WebShare server bin directory. Enter a description for this rule and make sure to allow extension path to execute as shown in the screenshot.

5. Now click on your default website in the left panel and then double click on the **ISAPI Filters** icon:

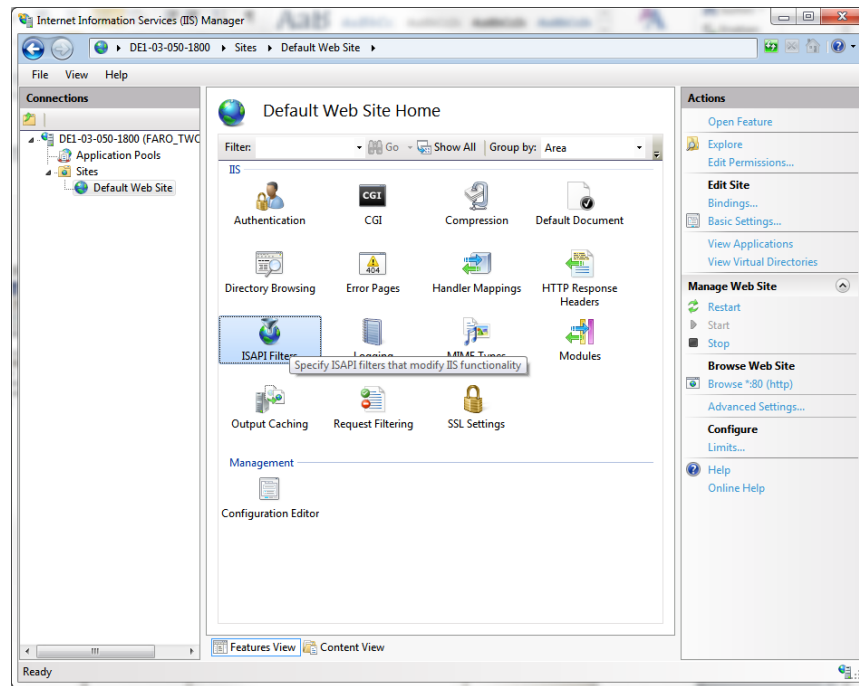


Figure 55: Default Web Site

6. Add another filter by clicking **Add** in the right hand panel:

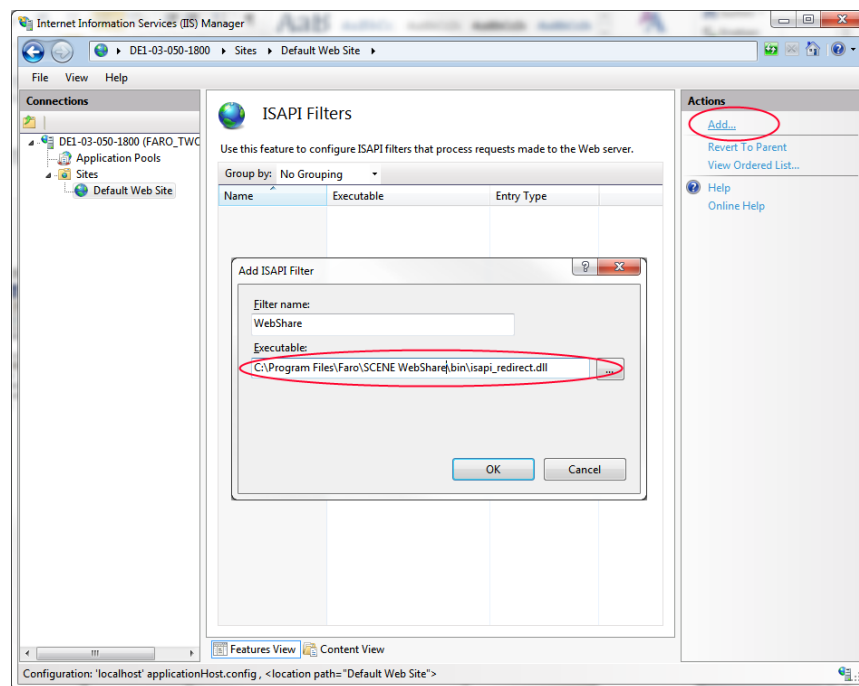
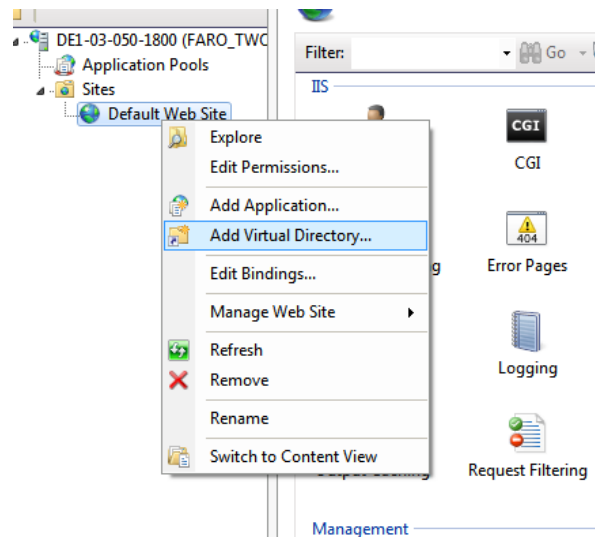


Figure 56: Add ISAPI filter

Again, the Executable must point to the `isapi_redirect.dll` in your WebShare server bin directory.

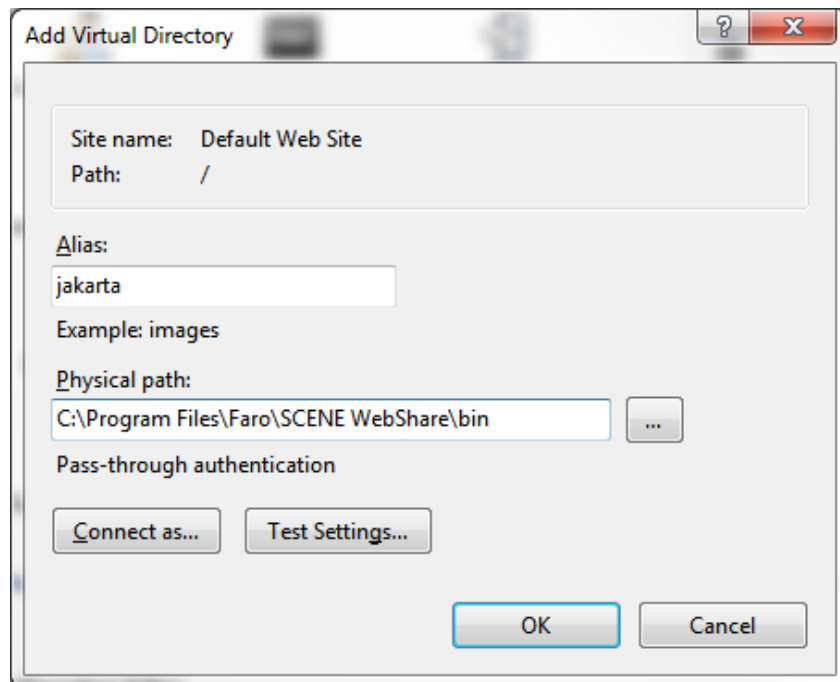
7. Navigate to Default Web Site again (left pane).

8. Right click on Default Web Site and choose **Add Virtual Directory...**



**Figure 57: Add Virtual Directory**

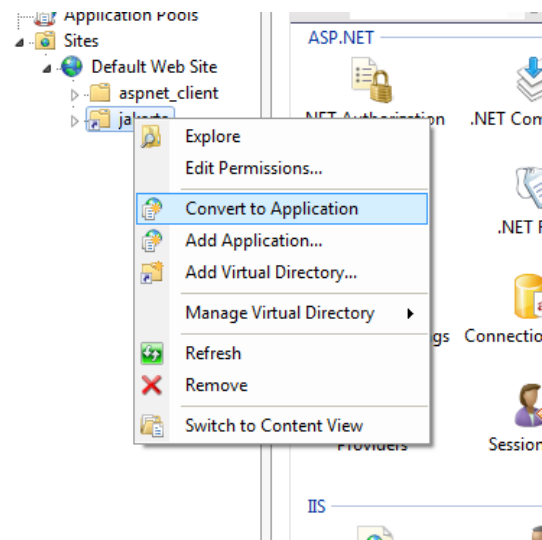
The alias for the Virtual directory must be *jakarta*. The path must point to your WebShare server *bin* directory.



**Figure 58: Add Virtual Directory**

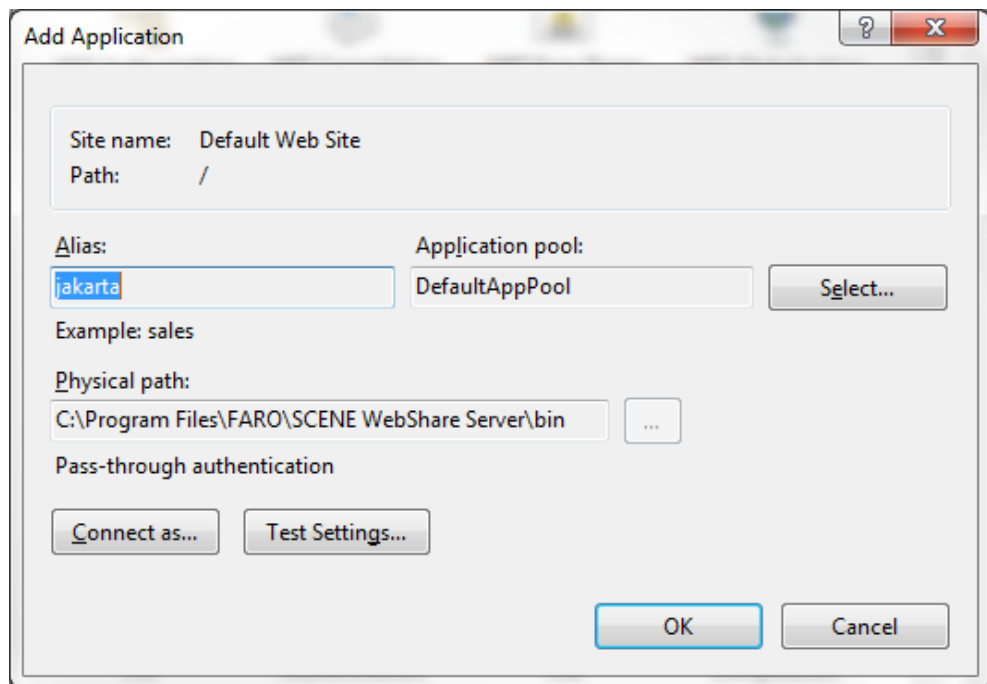
IIS will need execute permissions for the bin directory!

9. Right click on the virtual directory you just created and convert it into an application:



**Figure 59: Convert to Application**

10. Just hit **OK** in the pop up dialog:



**Figure 60: Add Application**

11. Navigate to the Default Web Site again (left pane) and double click on the **Handler Mappings** icon:

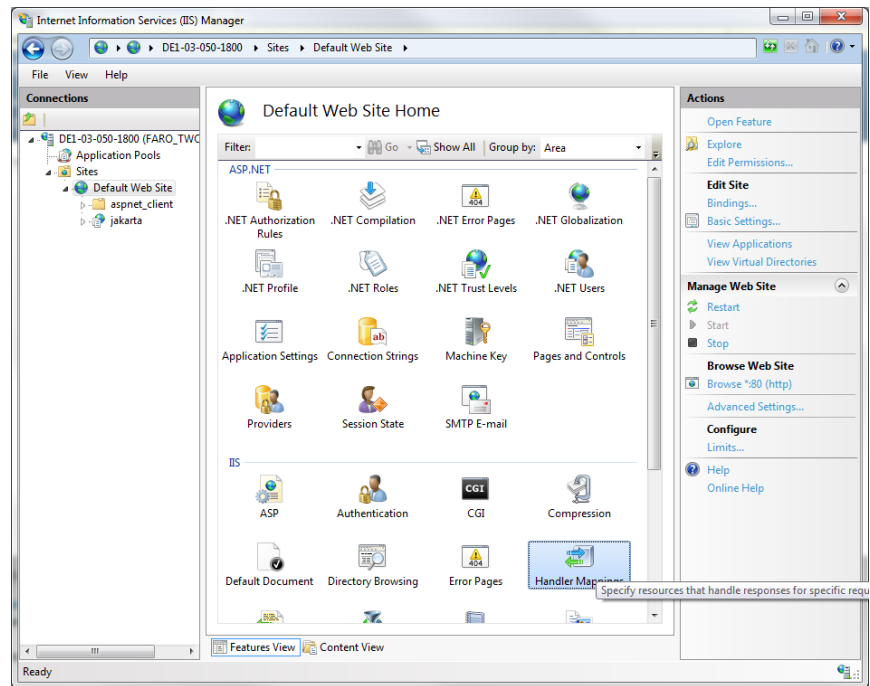


Figure 61: Default Web Site

12. Look for the *ISAPI-dll* entry in the list, right click it and choose **Edit Feature Permissions**:

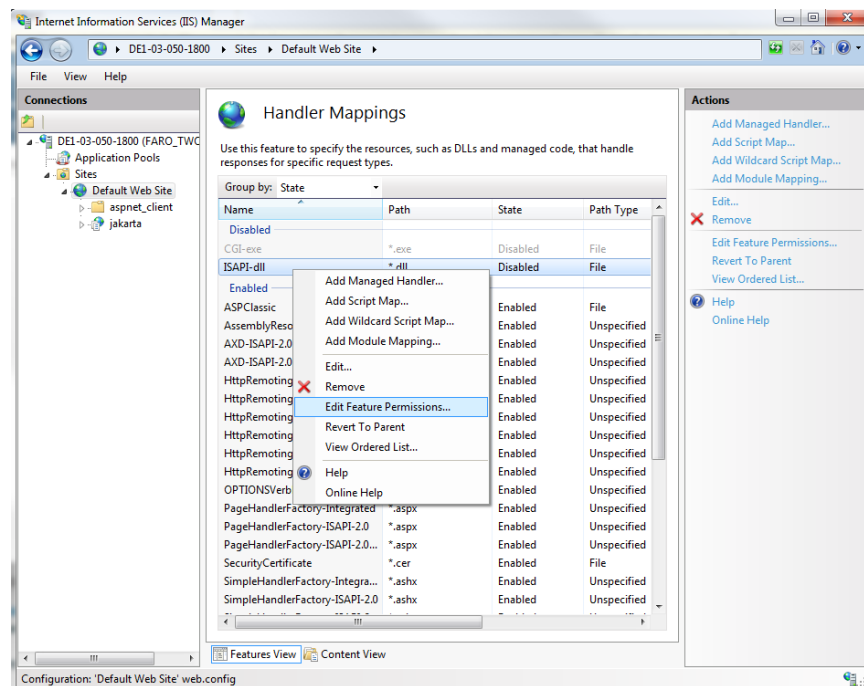
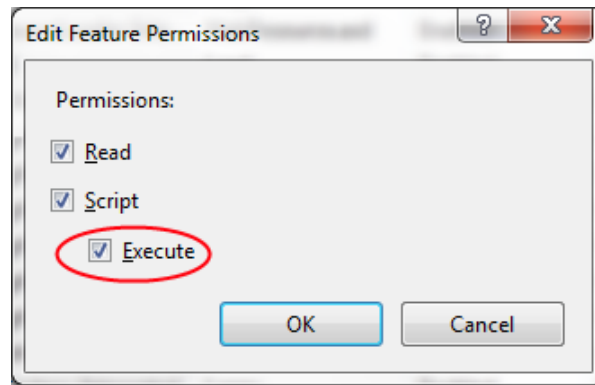


Figure 62: Edit feature permissions

13. Make sure **Execute** is enabled:



**Figure 63: Edit feature permissions**

14. Stop IIS.
15. Start your WebShare server service.
16. Start IIS.
17. In your web browser enter

<http://localhost/DebugTomcat/WebScene/WebScene.html>

The WebShare Window should now show up as if you connected directly to the WebShare server via

<http://localhost:8400/DebugTomcat/WebScene/WebScene.html>



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Version 3, 29 June 2007

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